



**General Management Plan  
Amendment  
Final  
Environmental Impact Statement**

---

**BISCAYNE NATIONAL PARK**

**Florida**



**Final**  
**Biscayne National Park General Management Plan Amendment**  
**Environmental Impact Statement**

---

**BISCAYNE NATIONAL PARK**

Homestead, Florida

This *General Management Plan Amendment/Final Environmental Impact Statement* evaluates four alternatives for the future management of Stiltsville. It defines the strategies that allow for diverse public use of Stiltsville, protect resources in the vicinity of the stilt structures, protect the public's health and safety, and establish a financial framework for reducing the park's costs for maintaining the structures.

Under Alternative A, the preferred alternative, a single non-profit organization would be created along with an appropriate agreement with the National Park Service and other groups for the management and use of the Stiltsville structures. The Stiltsville organization would rehabilitate the buildings to support education and interpretation opportunities. Under this alternative, Stiltsville also may provide a visitor and interpretive center, research facilities, an artist-in-residence dwelling, meeting space, and a satellite park office that would provide for National Park Service presence in the northern part of the park. The process of creating the non-profit organization and the operation of that organization would be carried out by stakeholders who represent a cross-section of the community, including the former Stiltsville leaseholders.

Alternative B would result in the National Park Service being responsible for the renovation, management, and operation of the Stiltsville structures. The designated uses of the structures would be similar to Alternative A.

Under Alternative C, the structures would be leased for private use based on current authorities. Potential lessees would compete for the right to lease the structures. The size or footprint of the structure would not be expanded. The purposes for which the structures could be leased is similar to Alternative A as well as for private uses similar to those under the former non-renewable leases. Preference would be given to individuals or groups that would provide for some level of public access.

Alternative D, the no action alternative, would implement the provision of the non-renewable leases that calls for the removal of the structures from the Stiltsville area.

The potential environmental consequences of the actions are addressed for each alternative, including impacts to natural resources, cultural resources, visitor experience and safety, visual resources, socioeconomic resources, and park operations.

National Park Service, Biscayne National Park  
Superintendent  
9700 S.W. 328th Street  
Homestead, Florida 33033-5634

For further information about this document, write the above address or call (305) 230-1144.



## EXECUTIVE SUMMARY

### OVERVIEW

Biscayne National Park encompasses a large portion of Biscayne Bay and the offshore waters south of Miami in Miami-Dade County, Florida. The park's established boundary includes approximately 173,000 acres. The area that includes Stiltsville was included in a boundary expansion of the park in 1980. In 1985, the submerged lands on which the structures were built were deeded to the federal government as part of Biscayne National Park. The park preserves a unique, sensitive marine environment that is an important component of the south Florida ecosystem and economy. In the northern portion of the park, seven structures constructed on pilings collectively referred to as Stiltsville currently exist. The first structure was constructed in the 1930s, and the number of structures rose to a peak of 27 by the 1960s. Natural events such as hurricanes and storms reduced the number to 14 by 1976 when the state of Florida entered into leases for the lands on which the structures existed with private individuals and groups. Hurricane Andrew irreparably damaged 7 of the 14 structures that were present at that time, leaving seven remaining, none of which existed during the area's heyday. The National Park Service honored the leases on these structures until they expired in 1999. Since then various agreements between former leaseholders and the National Park Service have been established until a decision for use and management of the area is developed.

### PURPOSE AND NEED

The purpose of this *General Management Plan Amendment and Final Environmental Impact Statement* is to evaluate the effects of several alternatives for the long-term management of the Stiltsville area within Biscayne National Park to ensure the protection of resources and public safety while allowing a range of recreational opportunities to support visitor needs.

In 1980, Congress expanded the northern boundary of Biscayne National Monument and redesignated the area as a national park. However, the submerged lands within the expansion area were owned by the state of Florida until 1985 when they were transferred to the federal government. The leases for the Stiltsville structures held by organizations and private individuals then became the responsibility of the National Park Service. In 1983 the Biscayne National Park general management plan stated that the leases were non-renewable and that the structures would be removed at the leaseholders' expense when the leases expired in 1999.

Because of the high level of public interest in the future of Stiltsville, the federal government and the leaseholders have entered into a series of standstill agreements and settlement agreements. Currently the National Park Service is managing the use of the structures under special use permits that expire in December 2002.

Past use of the Stiltsville structures has been limited exclusively to the individuals and organizations that held leases and to their guests. Changes in the management and use of these structures present an opportunity for the park to enhance its mission to bring about awareness of the unique natural and cultural resources and history of the bay to visitors who would otherwise have limited access to the marine environment.

The expressions of support to use the structures for education, visitor services, and enjoyment have led the National Park Service into a multi-stage planning process to identify future public uses. The first phase of the planning process was the creation of the Stiltsville Committee of the National Park System Advisory Board. The development of this *General Management Plan Amendment and Final Environmental Impact Statement* marks the second phase of this effort.

The amendment to the general management plan is needed to define the strategies that allow for diverse public use of Stiltsville while protecting the resources of the park, in particular those immediately adjacent to the structures and within the Safety Valve area. Due to benign neglect in recent years, the structures are in various degrees of disrepair. The amendment requires that structures be rehabilitated to protect the health and safety of visitors to the structures using sustainable, environmentally compatible design principles. The amendment also establishes a framework that would allow the structures to become financially self-supporting.

Specific issues that are addressed in this plan include:

Minimizing resource damage to the sensitive estuarine environment from motorized boat access to the structures, other uses of the structures, and the presence and handling of waste and hazardous materials on the structures.

The capability and suitability of the structures to support public use.

Removal of the structures in the event of significant damage resulting from storms, fire, or other non-maintenance related situations, following a process to determine whether structures should be removed or repaired.

Management of the structures that could allow them to be financially self-supporting.

## **THE PARK PURPOSE, MISSION, AND SIGNIFICANCE**

The purpose, mission, and significance of Biscayne National Park, based on the park's enabling legislation, provide the general direction for each alternative. Statements of the park's purpose, mission, and significance currently are being revised in association with a full update to the park's general management plan that is not yet in draft form and has not been released for public comment. (Statements of this type were not included in the park's current general management plan, which was prepared in 1983.) The draft statements are reproduced below to provide the reader with adequate background when examining the summary of the alternatives and the environmental consequences.

### **Purpose**

According to the park's legislation, the purpose of Biscayne National Park is "to preserve and protect for the education, inspiration, recreation, and enjoyment of present and future generations a rare combination of terrestrial, marine, and amphibious life in a tropical setting of great natural beauty." This same statement is proposed as the park purpose statement in the updated general management plan.

## **Mission Statements**

In the updated general management plan, the three missions of the park are defined as follows:

Conserves the rare combination of Florida coral reefs and keys, estuarine bay, mangrove coast, the wildlife, associated habitats, and the historic elements contained within them.

Exemplifies responsible stewardship and fosters responsibility and stewardship within others.

Enables visitors to experience tranquility, scenic vistas, compatible recreation, and the underwater environment.

## **Significance Statements**

Biscayne National Park is significant in that:

The park's fabric of Florida coral reefs and keys, estuarine bay and mangrove coast is an integral part of the south Florida ecosystem and the wider Caribbean community providing a place where diverse, temperate and tropical species mingle.

Consistent with the park purpose and values, and the National Park Service Organic Act, visitors enjoy opportunities for a multitude of recreational activities in proximity to one of the country's major metropolitan centers.

Visitors find inspiration in Biscayne's tranquility, solitude, scenic vistas, underwater environment, and the sounds of nature's voices.

The park encompasses the northernmost extent of fragile and dynamic Florida coral reefs and coastal systems and is characterized by transitions in the physical and biological environment.

The park preserves a largely undisturbed gene pool of tropical and subtropical flora.

The park provides a rare opportunity to experience largely undeveloped Florida Keys surrounded by clear tropical waters and fresh sea breezes.

The park preserves unique marine habitats and nursery environments that are capable of sustaining diverse and abundant native fisheries.

The cultural history found in the park is inextricably linked to the natural environment. The submerged and terrestrial resources represent a continuum of rich history and a melding of diverse cultures from prehistoric times to today.

The park offers outstanding opportunities for education and scientific research due to the diversity, complexity and interrelatedness of the natural and cultural resources and provides a dynamic laboratory for study and learning.

## ISSUES

Public scoping identified several environmental issues that should be addressed in the conceptual site plan. The National Park Service interdisciplinary team identified the following issues through public meetings, internal and external scoping, and meetings with stakeholders. Each issue is analyzed in this environmental impact statement:

- Water quality
- Biological resources
- Endangered or threatened species
- Ecologically critical areas
- Cultural resources
- Visitor experience and safety
- Soundscape
- Visual resources
- Park operations
- Socioeconomic resources

## OVERVIEW OF ALTERNATIVES

Four alternatives were analyzed for impacts of actions on the environment and are described briefly below. The “Alternatives” section provides a complete description of the alternatives.

### **Alternative A: Proposed Action –Non-Profit (IRS 501 (C) (3)) Organization Development and Management to Provide for Public Use**

Under Alternative A, one or more organizations or individuals may create a single non-profit organization under the regulations of the Internal Revenue Service and non-competitively enter into an appropriate arrangement with the National Park Service for the management and use of the Stiltsville structures. The Stiltsville organization would develop, manage, and maintain the seven existing Stiltsville structures to provide broad public access and diversity of use consistent with National Park Service policy and best management practices for environmental protection. Alternative A would include a mix of uses that may include:

Public functions and services including non-profit organization functions, public and private education programs, scientific research activities, an artist-in-residence program, professional meetings and retreats, day use, and rustic campsites.

National Park Service functions, including interpretation, resource management, and ranger activities.

The process of creating the non-profit organization and the operation of that organization would be carried out by stakeholders who represent a cross-section of the community, including the former Stiltsville leaseholders. Public functions may be provided by other entities through agreements with the Stiltsville organization. The organization would seek donated funds and grants from a wide variety of people and organizations or funds from entities participating with the organization to repair, rehabilitate, and operate the buildings at Stiltsville to support the intended uses. They may also generate funds for these purposes through user fees.



## **User Capacity**

A user capacity would be set for each structure according to the type of designated use.

## **Protecting Park Resources**

Measures would be employed to minimize the effects of use of the structures on the environment. Water access to the sites would be limited to a specific number of boats, to specific types of user groups, or to vessels operated by trained persons to navigate the fragile environment. This plan would encourage the use of four-cycle direct fuel injection engines and non-fossil fuel oils on boats to minimize the amount of pollution being emitted into the air and water.

Best management practices during construction, operations, and maintenance of the structures would minimize adverse impacts on park resources. For example, users of the structures would not be allowed to store hazardous or toxic materials on the structures except in limited quantities. Non-toxic construction materials would be used during rehabilitation of the structures. Sanitary wastes would be strictly controlled and appropriate storage and disposal methods employed.

## **Conditions for Removal**

This plan would provide a decision framework for determining whether a structure should be removed or rehabilitated in the event the structure was severely damaged in a storm or other event.

## **Protecting Health and Safety**

Regulating the proper storage and disposal of hazardous materials, sanitary wastes and trash would further protect public health and safety. The structures would be rehabilitated, based on relevant building codes, using designs that would provide adequate protection for users of the structures, including visitors with physical disabilities. The potential for increased presence of National Park Service law enforcement in the northern portion of the park would further enhance protection of the public.

## **Sustainable Environmentally Compatible Design**

Renovation of the structures would not increase their size or footprint. Renovation would be accomplished using materials that are non-toxic to the environment. Design elements such as wastewater storage systems and solar power would be employed to enhance the environmental compatibility of the structures.

## **Financial Responsibility**

Uses of the structures would be financially self-sustaining. Agreements between the Stiltsville organization and partnering organizations would be executed to ensure that management and maintenance costs are borne by the user organizations, or some of the costs could be borne by the organization with the exception of the structure(s) utilized by the National Park Service. Fees may also be retained to help offset costs of operations. The organization would bear the initial

costs to renovate the structures. Depending on the intended use of the structures renovation would range from primitive facilities with minimal or no services to structures that could provide visitors with potable water, bathrooms, minimal lighting or running water. The costs for renovation would range from \$200,000 to \$500,000 per structure.

### **Alternative B: National Park Service Development and Management to Provide for Public Use**

Under Alternative B, the National Park Service would renovate, manage, operate, and maintain the seven existing Stiltsville structures. The range of uses and costs under this alternative would be similar to Alternative A, including the availability of some structures for use by private individuals or groups through a park reservation system.

User capacity, conditions for removal (hurricane damage or fire) and actions related to protecting resources, protecting public health and safety, and sustainable environmental design principles would be similar to Alternative A.

### **Alternative C: Competitive Leasing to Provide for Public and Private Use**

If an acceptable non-profit organization cannot be found, this alternative would become the preferred. The Stiltsville structures, with the possible exception of one structure designated for National Park Service use, would be competitively leased for private use based on current authorities (36 CFR, Part 18 as amended by regulations published in the *Federal Register* on December 27, 2001). The National Park Service would issue, approve, monitor, and enforce the leasing program. All potential future lessees, including the former leaseholders, would compete on the same basis for the right to lease these structures. The purposes for which the structures could be leased would be similar to the range of uses defined in Alternative A, as well as for private uses similar to those under the former non-renewable leases. The Request for Proposal (RFP) would include scoring factors weighted towards responses from individuals or groups that would use the structures for park mission type purposes.

As in Alternative A, the National Park Service could exercise the option of renovating, operating, and maintaining one structure to establish a presence in this northern portion of the park to monitor and enforce the leasing program and provide user information and limited interpretive programs.

If a sufficient number of lease proposals are not received that would allow for public use or designate uses that meet the park mission, then leases could be granted to individuals or groups for their exclusive use. The nature and frequency of use by these groups would not differ substantially from practices that have occurred since 1985 when the National Park Service acquired the land on which the structures are built.

All future leaseholders, regardless of type of use, would be responsible for renovating, operating, and maintaining their respective structures to specified standards set by the National Park Service. Costs for renovation would be similar to the costs under Alternative A. Leaseholder responsibility would also include the purchase of liability insurance and the costs of repairs and maintenance of these structures. Leases would include the following types of stipulations:

The leased premises would be used only for purposes prescribed in the lease.

The lessee would not expand the size or footprint of the structure.

The lessee would agree to maintain the structure in a reasonably sound, livable, and attractive condition and would be required to meet state and federal health and safety codes.

#### **Alternative D: No Action – Removal of Structures**

Under this alternative, at the end of the Special Use Permit or any extension of that agreement, the National Park Service would require the implementation of the provision contained in all the non-renewable leases at Stiltsville that call for the removal of all man-made structures from Biscayne National Park.

Demolition of the structures and removal of material would adhere to standards set by the National Park Service. These would include operation and anchoring of barges, containment of silt and minimization of bay bottom disturbance, and containment of demolished material. Standards would ensure the least damage to park resources.

Management and operations within the northern portion of the park would occur similar to current conditions. Operations for all division functions including Resource and Visitor Protection, Interpretation, Resource Management, Science, and Maintenance would originate from park headquarters and the Dante Fascell Visitor Center, the park's main visitor center. These are located at Convoy Point in the southwest part of the park, approximately 22 miles from Stiltsville. Staff would access the site and conduct park operations in the Safety Valve area from boats after traveling for Convoy Point. This would include transport of equipment and staff and would involve minimum response times to needs in the area from 30 to 60 minutes. Contact with visitors in the Safety Valve area would take place intermittently when staff are available in the area. Interpretation of resources that are present in and important to this portion of the park would take place at the Dante Fascell Visitor Center.

Bay resources such as seagrass beds that have been disturbed or degraded by the long-term presence of the structures would be restored or, where feasible, allowed to return naturally.

Costs to demolish the structures and remove materials would range from \$100,000 to \$150,000 per structure depending on the structure's size and location.

#### **Environmentally Preferred Alternative**

The environmentally preferred alternative is defined by the Council on Environmental Quality (1978) as the alternative that best meets the criteria or objectives set out in Section 101 of the National Environmental Policy Act. The environmentally preferred alternative best meets the following requirements:

Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.

Ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.

Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.

Preserve important historical, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.

Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The environmentally preferred alternative is the alternative that causes the least damage to the biological and physical environment — the alternative that best protects, preserves, and enhances historic, cultural, and natural resources. This discussion also summarizes the extent to which each alternative meets Section 102(1) of the National Environmental Policy Act, which asks that agencies administer their own plans, regulations, and laws to be consistent with the policies outlined above to the fullest extent possible.

Implementation of Alternative A would offer protection of the surrounding bay environment through implementation of best management practices for maintenance and operations of the structures and through controlled access to and use of the structures. Operating requirements would include recycling and use of renewable energy sources. Additionally, increased public education and enhanced research would improve the public's knowledge and appreciation of Biscayne Bay. The Stiltsville non-profit organization would act to improve the structures to enhance public safety and access to the structures within the surrounding seascape, and would provide a wide range of beneficial public uses for civic and youth groups, the general public, the research and education communities, and National Park Service park administration. This would occur in a manner that was sustainable within the bay environment. Through enhanced access for the general public regardless of affiliation with a particular group, a broad range of community members would be able to visit and benefit from the Stiltsville structures and their location within a protected natural environment.

Alternative B would have impacts on park resources and visitor use and experience at Biscayne National Park very similar to those described for Alternative A. Management of the site by the National Park Service would place a greater portion of the costs of rehabilitation and operations on the federal government.

Alternative C would also have impacts on park resources and visitor use and experience similar to those described in Alternative A; however, realization of many of the public benefits described in Alternative A would depend on viable bids to provide public access being offered to and accepted by the National Park Service from private individuals or entities. A high number of leases offering services similar to those provided under Alternative A would result in broad public benefit. Leases that provide only exclusive private use would serve to limit public access and thus the public benefit that would be provided by the Stiltsville structures.

Alternative D, the no action alternative, would satisfy the six requirements of Section 101 of the National Environmental Policy Act. Alternative D would remove the structures and would provide the greatest potential to restore the bay's natural resources and protect natural and

cultural resources over time. Under Alternative D, the area available for seagrass bed regeneration would increase. This would provide increased habitat and forage for numerous wildlife and bird species, including endangered or threatened species, and would enhance ecologically critical areas. Reduced use of the area by visitors would provide enhanced protection to submerged cultural resources. Removal of the structures would also eliminate safety hazards presented by their use. Although removal of the structures would eliminate their use by the public and the esthetic contribution that many feel they make, Alternative D would continue to provide for a wide range of recreational opportunities in the Stiltsville area. Compared to the action alternatives, removing the structures under Alternative D would result in a loss of an opportunity to present the history of the area in the unique environment of Stiltsville; however, the history of the structures and the Stiltsville area could be told using other interpretive means. Because the structures have not been accepted for listing on the National Register of Historic Places, the environmental benefits that would be achieved with removal of the structures would outweigh the status of the structures as historical resources.

Based on the environmental analysis prepared for management of the Stiltsville structures, Alternative D is the environmentally preferred alternative. Alternative A would satisfy the six requirements of Section 101 of the National Environmental Policy Act to some degree including preservation of structures that some deem an important component of south Florida's history. However, Alternative D attains the widest range of beneficial uses of the environment, natural and cultural preservation, and visitor safety and enjoyment, without degradation of resources.

## **ENVIRONMENTAL ANALYSIS**

Impacts of the four alternatives were assessed in accordance with *Director's Order #12 and Handbook: Conservation Planning, Environmental Impact Analysis and Decision Making*. This handbook requires that impacts on park resources be analyzed in terms of their context, duration, and intensity. The analysis provides the public and decision makers with an understanding of the implications of management actions in the short and long term, cumulatively, and within context, based on an understanding and interpretation by resource professionals and specialists. For each impact topic, methods were identified to measure the change in park resources that would occur with the implementation of each alternative.

The following table summarizes the results of the impact analysis for the impact topics that were assessed.

## SUMMARY OF IMPACTS OF THE ALTERNATIVES

Impact Topic	Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use	Alternative B: National Park Service Development and Management to Provide for Public Use	Alternative C: Competitive Leasing to Provide for Public and Private Use	Alternative D: No Action Alternative - Removal of the Stiltsville Structures
Water Quality	The continued use of structures would result in a negligible to minor adverse impact to the water quality in the surrounding area. Long-term, indirect beneficial impacts would result from educational, social, and research programs that would be initiated under this alternative. Activities associated with Alternative A would contribute negligibly to the cumulative adverse effects on water quality resulting from increased urbanization and recreation in south Florida.	Same as Alternative A.	Same as Alternative A.	Demolition of structures would result in localized, short-term, negligible to minor adverse affects on water quality. A reduction of watercraft traffic in the area would represent a negligible to minor, long-term benefit to water quality. Minor to moderate long-term benefits would also accrue from the elimination of spills, sewage, or hazardous materials entering the water associated with use of the structures. There would be long-term, indirect, adverse impacts resulting from a lack of educational, social, and research programs with implementation of the no action alternative. The cumulative effects of this alternative would be beneficial and negligible.

### SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact Topic	Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use	Alternative B: National Park Service Development and Management to Provide for Public Use	Alternative C: Competitive Leasing to Provide for Public and Private Use	Alternative D: No Action Alternative - Removal of the Stiltsville Structures
Biological Resources	Use of the structures and watercraft in the area would result in adverse, long-term, localized and negligible to moderate effects to biological resources. Construction noise may displace wildlife or disrupt behavior that would be considered a localized, temporary and negligible to minor adverse effect. Adverse cumulative effects from implementation of Alternative A on biological resources would be negligible.	Same as Alternative A.	Same as Alternative A.	Long-term, negligible to moderate, beneficial effects would accrue with the removal of structures from improved water quality and seagrass habitat. Demolition activity would result in negligible to minor, localized and temporary adverse effects by disturbing and/or displacing wildlife and habitat. The beneficial effects of this action negligibly supports the actions implemented by other agencies to restore and protect Biscayne Bay.

## SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact Topic	Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use	Alternative B: National Park Service Development and Management to Provide for Public Use	Alternative C: Competitive Leasing to Provide for Public and Private Use	Alternative D: No Action Alternative - Removal of the Stiltsville Structures
Endangered or Threatened Species	Use of structures and watercraft access would cause undesirable effects on critical habitat in the Stiltsville area. With increased National Park Service presence in the area to enforce watercraft regulations, the short- and long-term adverse effects on endangered and threatened species would be negligible. Educating the public about the consequences of their activities on protected wildlife and their habitat would reduce impacts in the future. The implementation of Alternative A would have long-term negligible cumulative adverse impacts on endangered and threatened species, and their habitats.	Same as Alternative A.	Same as Alternative A.	The long and short-term effects of the no action alternative on endangered or threatened species would be localized and negligible. The beneficial impacts on endangered and threatened species would include preservation and enhancement of their habitat. The cumulative effects of this plan and others to improve water quality and clarity in Biscayne Bay would result in minor beneficial effects on federal- and state-listed species.



## SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact Topic	Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use	Alternative B: National Park Service Development and Management to Provide for Public Use	Alternative C: Competitive Leasing to Provide for Public and Private Use	Alternative D: No Action Alternative - Removal of the Stiltsville Structures
Ecologically Critical Areas	Construction activity would result in indirect negligible to minor short-term impacts to ecologically critical habitats. Use of boats to access structures would continue to cause undesirable effects on seagrass beds and substrates representing a localized, long-term and minor to moderate adverse effect to this essential fish habitat. Long-term, adverse effects on ecologically critical areas from discarding of wastes into the environment would be minor. Educating the public about the consequences of their activities on fragile estuarine ecosystems would probably reduce adverse effects to them in the future. Negligible cumulative effects would occur with this alternative.	Same as Alternative A.	Same as Alternative A.	Localized effects to the ecologically critical areas during structure removal activities would be negligible to minor and short-term. The localized long-term beneficial effects of Alternative D on essential fish habitat in the area would be minor to moderate with a reduction in boating activity. The cumulative effects of this plan and others improve water quality and clarity would result in a minor to moderate beneficial effect on ecologically critical areas in the bay.

### SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact Topic	Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use	Alternative B: National Park Service Development and Management to Provide for Public Use	Alternative C: Competitive Leasing to Provide for Public and Private Use	Alternative D: No Action Alternative - Removal of the Stiltsville Structures
Cultural Resources	Negligible long-term adverse impacts on submerged cultural resources from construction activity. Negligible to minor localized long-term adverse effects to cultural resources would result from the continued use and access to the structures compared to the no action alternative. The cumulative effects to cultural resources would be adverse and negligible to minor.	Same as Alternative A.	Same as Alternative A.	The removal of the structures would result in the loss of an opportunity to present the history of the area in the unique environment of Stiltsville. The demolition activities would result in long-term negligible to minor adverse impacts to submerged cultural resources. Reduced visitor use of the area after structure removal would result in long-term negligible to minor benefits to submerged cultural resources in the area. The cumulative effects to cultural resources would be adverse and negligible to minor.

## SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact Topic	Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use	Alternative B: National Park Service Development and Management to Provide for Public Use	Alternative C: Competitive Leasing to Provide for Public and Private Use	Alternative D: No Action Alternative - Removal of the Stiltsville Structures
Visitor Use and Experience and Visitor Safety	Long-term, minor to moderate, beneficial effects by providing for a broad range of public uses and opportunities for continued public enjoyment of Stiltsville. Increased presence of park staff would provide enhanced public awareness of Biscayne National Park and long-term, minor to moderate benefits. Long-term, minor to moderate, beneficial effects on visitor health and safety would result from increased staff, additional controls on boating practices, and physical structural and safety improvements to the structures. Moderate to major, cumulative effect.	Same as Alternative A.	Long-term, minor to moderate, beneficial effects to the extent that leases provide for a broad range of public uses and opportunities for continued public enjoyment. Increased presence of park staff would enhance public awareness of Biscayne National Park, with long-term minor to moderate benefits. Long-term minor to moderate, beneficial effects on visitor health and safety would result from increased staff, additional controls on boating practices, and physical structural and safety improvements to the buildings. Moderate to major, cumulative effect.	Minor to moderate beneficial effects for visitors seeking quiet passive experiences in the Stiltsville area. The removal of the structures would add negligibly to the amount of open water available for visitor use. Improvements to the natural seascape would offer minor to moderate, beneficial effects for those who appreciate natural settings. For those who have used or have been associated with the structures, long-term, adverse effects to their experiences relative to Stiltsville would be moderate to major. Minor, adverse effects would result from the elimination of opportunities for environmental education and opportunities. Beneficial effects on visitor safety would be negligible to minor. Cumulative effects on visitor experience and safety would be negligible to minor.

### SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact Topic	Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use	Alternative B: National Park Service Development and Management to Provide for Public Use	Alternative C: Competitive Leasing to Provide for Public and Private Use	Alternative D: No Action Alternative - Removal of the Stiltsville Structures
Soundscape	Noise generated from renovation/construction activities and routine maintenance of the structures would have a direct, localized, short-term, minor to moderate adverse effect on the natural soundscape. The noise level generated by public and/or private boating access and use of the structures would have a direct but localized, long-term, minor to moderate adverse effect on the natural soundscape. There would be a negligible, adverse cumulative effect on soundscape.	Same as Alternative A.	Same as Alternative A.	Implementation of Alternative D would have direct, short-term, minor to moderate adverse effects on soundscape in a localized area during demolition activities. After removal of the structures there would be a direct, long-term, minor to moderate, beneficial effect in this localized area because noise associated with boating access and use of the structures would be eliminated. Removal of the structures would have a negligible to minor beneficial cumulative effect on the natural soundscape.

### SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact Topic	Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use	Alternative B: National Park Service Development and Management to Provide for Public Use	Alternative C: Competitive Leasing to Provide for Public and Private Use	Alternative D: No Action Alternative - Removal of the Stiltsville Structures
Visual Resources	<p>In the short-term, the renovation of these structures would have direct, negligible to minor adverse effects on the visual resources because of the construction activities. In the long-term, the retention and use of these structures would have a direct and localized, negligible, adverse or beneficial effect, depending on the perception and values of the individual viewing the scene. In the context of the urban/coastal environment that surrounds the bay, the structures would have a negligible or minor adverse cumulative effect on visual resources.</p>	Same as Alternative A.	Same as Alternative A.	<p>In the short-term, the removal of these structures would have direct, negligible to minor adverse effects on the visual resources because of demolition activities. In the long-term, the removal of the structures would have a direct and localized, negligible to minor beneficial or adverse effect, depending on the perception and values of the individual viewing the scene. The cumulative adverse effects of this alternative would be generally considered negligible or minor.</p>

## SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact Topic	Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use	Alternative B: National Park Service Development and Management to Provide for Public Use	Alternative C: Competitive Leasing to Provide for Public and Private Use	Alternative D: No Action Alternative - Removal of the Stiltsville Structures
Park Operations	Alternative A would have a direct, long-term, negligible to minor adverse effect on the financial and staffing component of park operations because of the development, operation, maintenance, and staffing costs associated with the possible rehabilitation and use of a structure as a satellite park ranger office/interpretive contact facility. However, if law enforcement were improved under Alternative A, improved visitor/resource protection, public health and safety functions and decreased response time to this northern portion of the park would provide a direct, minor beneficial effect because of the increased long-term National Park Service presence.	Alternative B would have a direct, long-term, moderate adverse effect on National Park Service operations by substantially increasing both the financial and staffing burden on National Park Service operations. This alternative would maximize the National Park Service presence in this heavily used northern portion of the park and would have a direct, long-term moderate beneficial effect, allowing reduced response time for emergencies, improved monitoring for better resource protection needs, and the expansion of law enforcement, visitor protection, and public health and safety functions.	Alternative C would have a direct, long-term minor adverse effect on park operations due to the capital development costs associated with rehabilitation of stilt structures used for National Park Service purposes, increased costs of additional National Park Service staff necessary to monitor users and manage the competitive lease program. However, if law enforcement were improved under Alternative C, improved visitor/resource protection, public health and safety functions and decreased response time to this northern portion of the park would provide a direct, minor beneficial effect because of the increased long-term National Park Service presence.	Removal of the Stiltsville structures would have a direct, long-term moderate beneficial effect on the financial component of National Park Service park operations because this action would eliminate any future need to expend National Park Service funds to renovate or preserve these structures. Likewise, this action would eliminate the need to provide additional staffing to manage any future use that might be considered for these structures. However, there might be a potential direct, short and long-term, moderate adverse effect on law enforcement, visitor/resource protection, and public health and safety park operation functions in this northern portion of the park, if National Park Service were to ignore the need for an increased presence due to the removal of these structures.

## SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)

Impact Topic	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Socioeconomics	Implementing Alternative A would have long-term negligible to minor beneficial effects to the local economy. There would be no adverse or beneficial effects to concessions within the park. The mix of public uses proposed under Alternative A would provide long-term minor socioeconomic benefits by increasing the opportunities for the public, including the economically disadvantaged, to access the structure and gain an appreciation of park resources.	Same as Alternative A.	Alternative C would have long-term, negligible to minor beneficial effects on the local economy. There would be no adverse or beneficial effects to concessions within the park. Alternative C would also provide long-term, negligible socioeconomic benefits from increased opportunities for the public, including the economically disadvantaged, to access the structures.	Removal of the structures would have short-term negligible to minor beneficial effect on local business related to construction activity. Removal of the structures would eliminate the opportunity for public use and educational opportunities to increase public awareness of the history and ecology of the area. This would result in long-term minor adverse socioeconomic effects.





# **TABLE OF CONTENTS**

## **Executive Summary**

### **Purpose and Need for the Plan**

Purpose of the General Management Plan Amendment 1

Need for the General Management Plan Amendment 1

Geographic Area Covered by the Plan 6

Park Purpose, Mission, and Significance 6

Background 10

Impact Topics 12

Water Quality 13

Biological Resources 13

Endangered or Threatened Species 14

Ecologically Critical Areas 14

Cultural Resources 14

Visitor Experience and Visitor Safety 15

Sound Environment/Soundscape 15

Visual Resources 15

Park Operations 16

Socioeconomics 16

Issues Eliminated from Further Discussion 16

Connected, Cumulative, and Similar Actions 18

Cooperating Agencies 18

Connected and Similar Actions 18

Cumulative Actions 19

### **Alternatives**

Formulation of the Alternatives 21

Formulation of the Proposed Action 21

Formulation of the No Action Alternative 21

Consideration of Other Alternatives 22

Mitigation 22

Alternative A: Proposed Action – Non-Profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use 23

Concept 23

Public Functions 23

National Park Service Functions 24

User Capacity 25

Protecting the Resources of the Park 25

Access 25

Fuels, Hazardous Material, and Waste 26

Other Resource Protection Measures 27

Conditions for Removal of Structures 27

Protecting Health and Safety of the Public 27

## **TABLE OF CONTENTS (Continued)**

Sustainable, Environmentally Compatible Design Principles	28
Financial Responsibility for Self-Sustaining Operation of Stiltsville	28
Alternative B: National Park Service Development and Management to Provide for Public Use	29
Concept	29
Financial Responsibility for Self-Sustaining Operation of Stiltsville	29
Alternative C: Competitive Leasing to Provide for Public and Private Use	30
Concept	30
User Capacity	30
Protecting the Resources of the Park	31
Protecting the Health and Safety of the Public	31
Sustainable, Environmentally Compatible Design Principles	32
Financial Responsibility for Self-Sustaining Operation of Stiltsville	32
Alternative D: No Action – Removal of the Stiltsville Structures	33
Concept	33
Alternatives Eliminated from Further Study	34
Short-Term Leases	34
Mothballing	34
Boundary Adjustments to Remove Stiltsville from Biscayne National Park	34
Preferred Alternative	36
Environmentally Preferred Alternative	37
Summary of Alternatives	39
Degree to Which Each Alternative Meets the Purpose, Need, and Objectives	39
Important Features of Each Alternative	49
Impacts of Each Alternative	49

### **Affected Environment**

Water Quality	61
Biological Resources	64
Seagrass Beds	64
Aquafauna	67
Avifauna	69
Artificial Habitat Communities	69
Endangered or Threatened Species	70
Ecologically Critical Areas	73
Cultural Resources	75
Historic Resources	75
Archeological Submerged Sites	76
Visitor Use and Experience and Visitor Safety	77
Sound Environment/Soundscape	80
Visual Resources	82
Park Operations	83
Socioeconomics	84

## **TABLE OF CONTENTS (Continued)**

### **Environmental Consequences**

General Methodology for Establishing Impact Thresholds and Measuring Effects	87
General Analysis Method	87
Impairment Analysis Method	88
Cumulative Effects Analysis Method	93
Environmental Analysis Organization	93
Water Quality	93
Methodology	94
Regulations and Policies	95
Impacts of Alternative A (Managed by a Non-profit Organization)	95
Impacts of Alternative B (National Park Service Management for Public Use)	98
Impacts of Alternative C (Competitive Leasing for Public Use)	99
Impacts of Alternative D (Removal of Structures)	100
Biological Resources	102
Methodology	102
Regulations and Policies	103
Impacts of Alternative A (Managed by a Non-profit Organization)	104
Impacts of Alternative B (National Park Service Management for Public Use)	107
Impacts of Alternative C (Competitive Leasing for Public Use)	108
Effects of Alternative D (Removal of Structures)	109
Endangered or Threatened Species	111
Methodology	111
Regulations and Policies	111
Impacts of Alternative A (Managed by a Non-profit Organization)	111
Impacts of Alternative B (National Park Service Management for Public Use)	113
Impacts of Alternative C (Competitive Leasing for Public Use)	114
Impacts of Alternative D (Removal of Structures)	114
Ecologically Critical Areas	116
Methodology	116
Regulations and Policies	116
Impacts of Alternative A (Managed by a Non-profit Organization)	117
Impacts of Alternative B (National Park Service Management for Public Use)	118
Impacts of Alternative C (Competitive Leasing for Public Use)	119
Impacts of Alternative D (Removal of Structures)	120
Cultural Resources	122
Methodology	122
Issues	123
Regulations and Policies	123
Impacts of Alternative A (Managed by a Non-profit Organization)	124
Impacts of Alternative B (National Park Service Management for Public Use)	125
Impacts of Alternative C (Competitive Leasing for Public Use)	126
Impacts of Alternative D (Removal of Structures)	126

## **TABLE OF CONTENTS (Continued)**

Visitor Use and Experience and Visitor Safety	128
Methodology	128
Regulations and Policies	128
Impacts of Alternative A (Managed by a Non-profit Organization)	129
Impacts of Alternative B (National Park Service Management for Public Use)	132
Impacts of Alternative C (Competitive Leasing for Public Use)	132
Impacts of Alternative D (Removal of Structures)	134
Sound Environment/Soundscape	136
Methodology	136
Regulations and Policies	136
Impacts of Alternative A (Managed by a Non-profit Organization)	138
Impacts of Alternative B (National Park Service Management for Public Use)	139
Impacts of Alternative C (Competitive Leasing for Public Use)	139
Impacts of Alternative D (Removal of Structures)	140
Visual Resources	142
Methodology	142
Regulations and Policies	142
Impacts of Alternative A (Managed by a Non-profit Organization)	143
Impacts of Alternative B (National Park Service Management for Public Use)	144
Impacts of Alternative C (Competitive Leasing for Public Use)	144
Impacts of Alternative D (Removal of Structures)	145
Park Operations	147
Methodology	147
Regulations and Policies	147
Impacts of Alternative A (Managed by a Non-profit Organization)	148
Impacts of Alternative B (National Park Service Management for Public Use)	149
Impacts of Alternative C (Competitive Leasing for Public Use)	150
Impacts of Alternative D (Removal of Structures)	151
Socioeconomics	152
Methodology	152
Regulations and Policies	152
Impacts of Alternative A (Managed by a Non-profit Organization)	152
Impacts of Alternative B (National Park Service Management for Public Use)	154
Impacts of Alternative C (Competitive Leasing for Public Use)	154
Impacts of Alternative D (Removal of Structures)	155
Sustainability and Long-Term Management	157
The Relationship between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity	157
Any Irreversible or Irretrievable Commitments of Resources That Would Be Involved Should the Alternative Be Implemented	157
Any Adverse Impacts that Cannot Be Avoided Should the Action Be Implemented	158

## **TABLE OF CONTENTS (Continued)**

### **Consultation and Coordination**

History of Public Involvement	159
Agencies/Tribes/Organizations/Individuals Contacted	162
List of Preparers	163
List of Recipients	164
Response to Comments	168

### **References**

Bibliography	213
Index of Key Words	218

### **APPENDIXES**

A	Description of the Stiltsville Structures	221
B	Decision Tree Flow Diagram	236
C	Stiltsville Committee Report	237
D	A Proposal for Joint Stewardship of Stiltsville and Miami's Marine Ecosystems	239
E	Species Observed or Recorded in the Stiltsville Region of Biscayne National Park	245
F	Letter from the Keeper of the National Register of Historic Places	248
G	Consultation Letters	251

### **LIST OF FIGURES**

Location	3
Vicinity	7
Seagrass Beds	65

### **LIST OF TABLES**

1	Estimated Use of Individual Structures under Alternative A	26
2	Estimated Use of Individual Structures under Alternative C	31
3	Objectives, and the Ability of the Alternatives to Meet Them	40
4	Summary of Important Features of the Alternatives	50
5	Summary of Impacts of the Alternatives	51
6	Endangered, Threatened, and Special Concern Species Present or Potentially Present in the Vicinity of Stiltsville	71
7	Annual Boat Launch Estimates	78
8	Typical Staffing of Biscayne National Park	83
9	Biscayne National Park General Management Plan Amendment Impact Threshold Definitions	89
10	Anticipated Effects to Common Visitor Activities in the Vicinity of Stiltsville	1301
11	Identification of Commenters	169
12	Comments and Responses	170



## **PURPOSE AND NEED FOR THE PLAN**

*This section defines the purpose of the general management plan amendment for the Stiltsville area of Biscayne National Park, and why the general management plan amendment is needed. It includes planning direction and guidance, and identifies the issues (decision points) and impact topics that were considered.*

### **PURPOSE OF THE GENERAL MANAGEMENT PLAN AMENDMENT**

The purpose of this general management plan amendment and associated environmental impact statement is to evaluate specific actions for the management of the Stiltsville area of Biscayne National Park. This plan amendment addresses the appropriate future development needs, uses, management, and maintenance of seven structures known as Stiltsville. These seven structures are located in Biscayne Bay, supported by pilings over the water, and are currently under special use permit to private individuals for day and overnight (exclusive) recreational uses. The location of Stiltsville within Biscayne National Park is shown on the Location map on page 3.

Facilities and activities within the park must be managed and regulated to preserve resources and values in accordance with the Organic Act of 1916, as amended, the park's enabling legislation, and other legal mandates. Management of park facilities also should conform to the *Biscayne National Park General Management Plan, Development Concept Plan, Wilderness Study, and Environmental Assessment* (National Park Service 1983).

### **NEED FOR THE GENERAL MANAGEMENT PLAN AMENDMENT**

In 1968, the President created Biscayne National Monument in southeast Florida. In 1980, Congress expanded the monument's boundaries and redesignated the area as Biscayne National Park. The submerged lands owned by the state of Florida within the expansion area were transferred by the state of Florida to the federal government in 1985.

There were 14 stilt structures, collectively known as "Stiltsville," within the expansion area. They were occupied under individual leases with the state of Florida, signed in 1976 with an expiration date of July 1, 1999.

Currently, seven structures remain. The others were more than 50 percent damaged or destroyed by the wind and surf during Hurricane Andrew in 1992.

The former leases designated the seven structures as "campsites," reflecting the rustic experience associated with current use. These structures are not connected to municipal water, sewer, or electrical service, and provide few other amenities (Canzanelli 2001).

The general management plan currently used to administer Biscayne National Park (National Park Service 1983) pointed out that the leases between the state of Florida and the leaseholders for the Stiltsville structures were nonrenewable. The general management plan stated, "when they [the leases] expire in 1999 all man-made structures will be removed" (National Park Service

1983). This language mirrors the language in the leases that required the leaseholders to remove, at their own expense, the structures when the leases expired.

However, based on the high level of public interest associated with the future of Stiltsville, the federal government and the former leaseholders entered into a series of standstill and settlement agreements and special use permits after the leases expired. These agreements maintained the status quo, giving interested parties time to develop a plan to reevaluate the future use of these structures. The last of the standstill agreements ended on March 31, 2001. It was followed by settlement agreements and then a Special Use Permit that provides right of occupancy to the former leaseholders until December 31, 2002.

The natural resources and ecological processes of Biscayne Bay cannot be adequately appreciated by looking across the water's surface from the shore. However, it is expensive for groups such as school classes to rent a boat for half-day or full-day education and interpretive opportunities and for low-income local residents to own a boat. Therefore, a large segment of the population in the nearby Miami metropolitan area, especially people with limited disposable income, has little opportunity to become familiar with the resources of the bay and the importance and value this ecosystem has to everyday life.

In recent years the use of the Stiltsville structures has been limited exclusively to the former leaseholders and their guests. The former leaseholders have, however, frequently made the structures available to community organizations, service clubs, and youth groups for short-term use. Because these structures present a unique opportunity for introducing the bay ecosystem to visitors who otherwise would have little opportunity to spend time on the water, the National Park Service would like to increase access by the general public, education organizations, and community groups.

Under the proposed action, one or more organizations or individuals may create a non-profit organization under the regulations of the Internal Revenue Service and non-competitively enter into an appropriate arrangement with the National Park Service for the management and use of the Stiltsville structures. The organization would develop, manage, and maintain the seven existing Stiltsville structures to retain their unique character and to provide broad public access and diversity of use consistent with National Park Service policy and best management practices for environmental protection. The proposed action would include a mix of uses that might include:

Public functions and services including non-profit organization functions, public and private education programs, scientific research activities, an artist-in-residence program, professional meetings and retreats, and rustic campsites.

National Park Service functions, including interpretation, resource management, and ranger activities.

The Stiltsville organization would seek donated funds or grants from a wide variety of sources and organizations or funds from entities participating with the organization to repair, rehabilitate and operate the buildings at Stiltsville to support the intended uses.







The support for the idea of using the structures for public education, interpretation, and enjoyment has led the National Park Service to enter into a multi-stage planning process to identify and recommend future public uses consistent with National Park Service policy. This process started in January 2001 with the creation of the Stiltsville Committee of the National Park System Advisory Board. The development of this *General Management Plan Amendment and Final Environmental Impact Statement* marks the next phase of this effort.

This general management plan amendment is needed, as identified by the National Park Service and through public comment, to:

- Codify the change in the National Park Service position on Stiltsville from “removal” to managing the structures for public use and enjoyment.

- Define the strategies that allow for diverse public use of Stiltsville.

- Protect the resources of the park, especially those immediately around the structures and within the Safety Valve area.

- Protect the health and safety of the public using the structures.

- Determine the sustainable, environmentally compatible design principles that should be applied to any renovation of facilities at Stiltsville.

- Establish a framework that could allow the structures to become financially self-supporting.

In conformance with the National Environmental Policy Act (NEPA), this final plan also presents and evaluates an alternative that would implement current management direction as set forth in the 1983 *Biscayne National Park General Management Plan* (the NEPA No Action Alternative). Under this alternative, the National Park Service would enforce the general management plan terms requiring removal of the structures upon expiration of the current special use permits.

Specific issues that the plan addresses include, but are not limited to, the following:

*Resource impacts:* Some visitors who operate boats around the structures or in the extremely shallow water of the Safety Valve may lack the skill, knowledge, or care to avoid sensitive marine resources such as seagrasses. Proper education, guidance, and management controls would help minimize undesirable impacts, such as sediment movement that could adversely affect aquatic organisms by reducing light penetration or through redeposition on the bay bottom.

*Ongoing maintenance needs:* As described in Appendix A, several structures have deteriorating features such as crumbling pilings or rotting decking. Substantial improvements and regular maintenance may be required to bring the structures to an appropriate condition for use.

*Removal of structures:* Because of the harsh marine setting of Stiltsville, the buildings eventually will sustain sufficient damage from hurricanes, storms, fires, or other events that they should be removed. Predetermined criteria would be used to determine whether a damaged structure should be removed or repaired (see Appendix B). This process would be followed upon the passing of any major storm or other significant event as

## PURPOSE AND NEED FOR THE PLAN

stipulated. Should there be any resulting damage to any of the Stiltsville structures, this process would supercede any management alternative selected for the site. When the decision process results in repairing a structure, design guidelines would direct the repairs to ensure compatibility with the existing character of Stiltsville. Design guidelines would be developed subsequent to the approval of this general management plan amendment.

*Public safety:* Concerns include structural integrity and the buildings' load bearing capacity when used by large numbers of people at one time. The deteriorated conditions described above, such as warped decking or inadequate guardrails, can imperil users.

*Spill potential:* Human wastes are produced during use, and hazardous materials such as petroleum fuels are stored and used on the structures. Without proper handling, storage, and/or disposal of these substances in and around the structures, damage could occur to sensitive marine resources.

This general management plan amendment is needed to address these issues and to provide the framework to guide rehabilitation, stabilization, and use of the structures and facilities in a manner that protects the surrounding environment.

## GEOGRAPHIC AREA COVERED BY THE PLAN

The area considered in this general management plan amendment is shown on the Vicinity map. It consists of the northern portion of the Safety Valve shoals within the boundary of Biscayne National Park and includes:

The seven stilt structures in the northern portion of Biscayne National Park; and

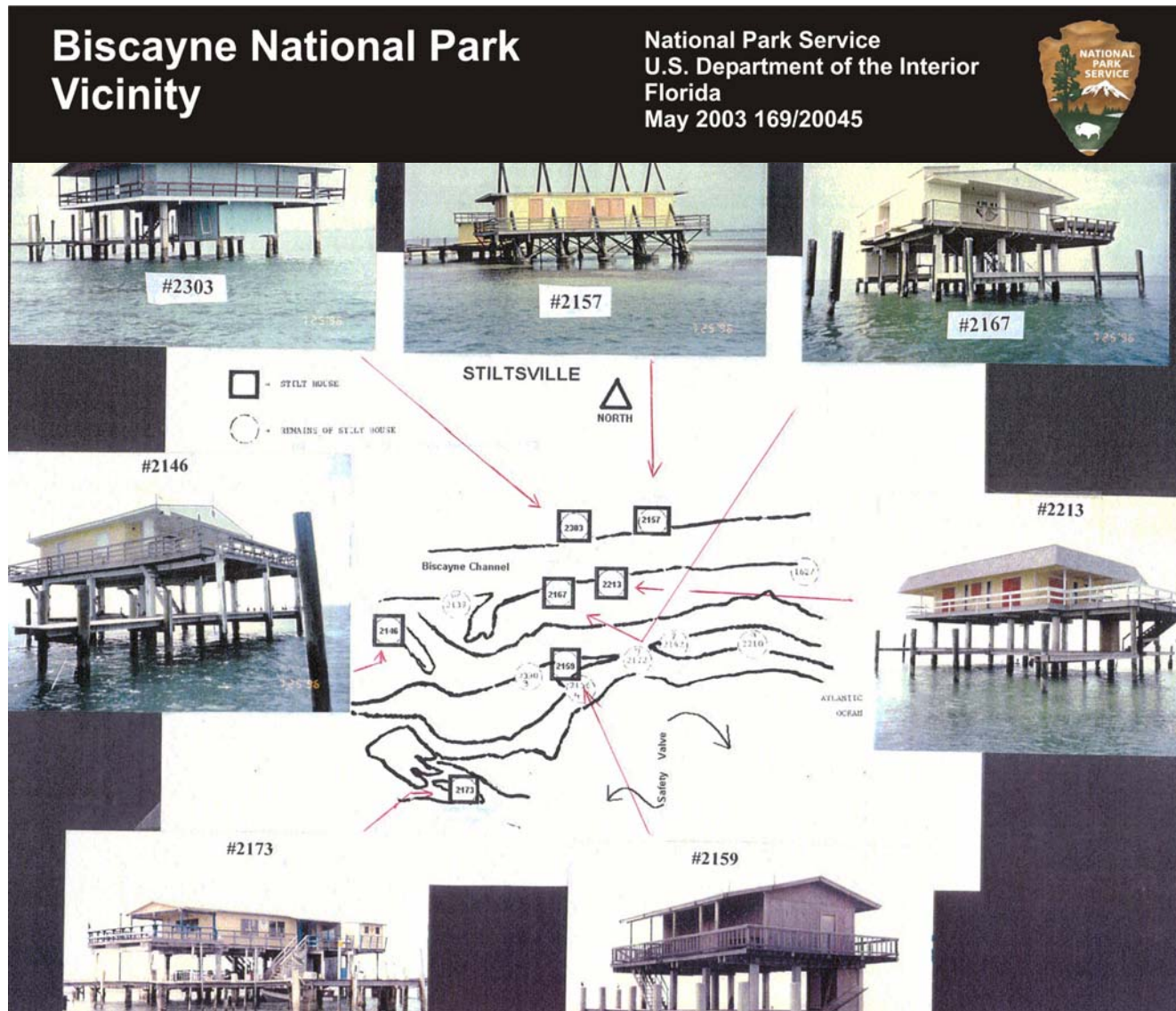
The bay extending approximately ¼ mile beyond any of the stilt structures.

For most resources, the geographic area covered by the environmental impact statement is the same as the area covered by the general management plan amendment. However, for some resources such as visitor use and experience, effects to the entire Miami metropolitan area are considered.

## PARK PURPOSE, MISSION, AND SIGNIFICANCE

The general management plan amendment for the Stiltsville area must conform with the purpose, mission, and significance of Biscayne National Park. Such statements, which were not included in the park's current general management plan prepared in 1983, are currently being revised in association with a full update to the park's general management plan. The draft statements are presented here to provide the framework within which Stiltsville must be managed.

Biscayne National Park was established in 1968 as Biscayne National Monument. The boundaries were expanded in 1974 "to add approximately 8,738 acres of land and water, including all of Swan Key and Gold Key." In 1980 the area was expanded by Congress to its current size and designated Biscayne National Park.





According to Public Law 90-606, the purpose of Biscayne National Park is “preserve and protect for the education, inspiration, recreation, and enjoyment of present and future generations a rare combination of terrestrial, marine, and amphibious life in a tropical setting of great natural beauty.” This same statement is proposed as the park purpose statement in the updated general management plan.

A draft mission statement for the park also has been prepared in association with the general management plan update. The three missions of the park are defined as follows.

Conserves the rare combination of Florida coral reefs and keys, estuarine bay, mangrove coast, the wildlife, associated habitats, and the historic elements contained within them.

Exemplifies responsible stewardship and fosters responsibility and stewardship within others.

Enables visitors to experience tranquility, scenic vistas, compatible recreation, and the underwater environment.

In fulfilling its mission:

Natural and cultural resources and associated values are protected, restored, maintained, and adaptively managed within their broader south Florida and Caribbean ecosystems and cultural context, based on sound science.

The park contributes to knowledge about natural and cultural resources and their associated values.

Visitors are satisfied with their opportunities to safely experience activities appropriate with park resources and purpose. Management decisions about visitor use are based on sound science.

Visitors and neighboring communities are aware of Biscayne National Park’s uniqueness within the context of the south Florida ecosystem. They understand the park’s importance and support preservation of park resources.

Significance statements also have been developed as part of the general management planning process. Biscayne National Park is significant in that:

The park’s fabric of Florida coral reefs and keys, estuarine bay and mangrove coast is an integral part of the south Florida ecosystem and the wider Caribbean community providing a place where diverse, temperate and tropical species mingle.

Consistent with the park purpose and values, and the National Park Service Organic Act, visitors enjoy opportunities for a multitude of recreational activities in proximity to one of the country’s major metropolitan centers.

Visitors find inspiration in Biscayne’s tranquility, solitude, scenic vistas, underwater environment, and the sounds of nature’s voices.

The park encompasses the northernmost extent of fragile and dynamic Florida coral reefs and coastal systems and is characterized by transitions in the physical and biological environment.

## PURPOSE AND NEED FOR THE PLAN

The park preserves a largely undisturbed gene pool of tropical and subtropical flora.

The park provides a rare opportunity to experience largely undeveloped Florida Keys surrounded by clear tropical waters and fresh sea breezes.

The park preserves unique marine habitats and nursery environments that are capable of sustaining diverse and abundant native fisheries.

The cultural history found in the park is inextricably linked to the natural environment. The submerged and terrestrial resources represent a continuum of rich history and a melding of diverse cultures from prehistoric times to today.

The park offers outstanding opportunities for education and scientific research due to the diversity, complexity and interrelatedness of the natural and cultural resources and provides a dynamic laboratory for study and learning. According to Public Law 90-606, the purpose of Biscayne National Park is "to preserve and protect for the education, inspiration, recreation, and enjoyment of present and future generations

## BACKGROUND

Biscayne National Park encompasses a large portion of Biscayne Bay and the offshore waters to the south of Miami in Miami-Dade County, Florida. The park's established boundary includes approximately 174,000 acres.

Nearly 165,000 acres are marine waters, containing about 72,000 acres of coral reefs.

About 9,100 acres are dry land, of which 4,250 acres are divided into 42 islands or keys.

Resources protected within the park include a unique combination of estuarine and marine environments. There are currently 16 federally listed threatened and endangered wildlife species occurring within Biscayne National Park. Additionally, there are 2 state-listed threatened and endangered wildlife species, 31 state-listed threatened and endangered vascular plants, and 8 state-listed wildlife species of special concern occurring within the park.

Biscayne Bay, including the Safety Valve area where Stiltsville is located, is designated by the state legislature as an Outstanding Florida Water. The park preserves a unique, sensitive, marine environment that is an important component of the south Florida ecosystem and the economy of south Florida.

Resource-based recreation is an important part of Biscayne National Park's mission. The park was used by more than 442,000 visitors in 1999 (<http://www.nps.gov/bisc>). Boating is the most visible activity within the park. Other recreational activities include snorkeling, diving, fishing, camping, picnicking, and hiking on nature trails. The park provides excellent opportunities for the public to learn about marine ecosystems and the fragile, threatened nature of Biscayne Bay.

Stiltsville has a colorful history that dates back to the 1930s, when "Crawfish Eddie" Walker built the first shack on stilts above the water. Over the years, more buildings were constructed, and the area took on an aura of mystery. While highly visible from the mainland, Stiltsville structures were accessible only by water, and admission to some of the structures was by invitation only.



This contributed to the area's reputation as the place to see and be seen when visiting the winter resorts on nearby Miami Beach. Stories of illegal alcohol and gambling led to several police raids on two of the structures known as the Bikini Club and Quarterdeck Club.

At its peak in 1960, there were 27 structures on the flats. However, hurricanes, fires, and the exposed setting made every building relatively short-lived. When the state of Florida entered into leases in 1976 for the lands on which the structures were built, only 14 structures remained.

In 1985 the state of Florida deeded the submerged land on which the stilt structures are built to the federal government as part of Biscayne National Park. The National Park Service honored the leases. The leases expired in 1999.

Below is a brief Stiltsville chronology.

Prior to 1937	"Crawfish Eddie" Walker builds the first structure in Stiltsville.
1937	Three friends of Crawfish Eddie, the fishermen Grady, Lee, and Edwards, build the second shack in Stiltsville.
1940	Stiltsville's first private club, the Quarterdeck Club, opens in November.
Post 1940	The second club, the Swan, is built. It later changes its name to the Probus.
1945	There are 12 private structures and 2 clubs in Stiltsville.
1949	Quarterdeck Club is raided, but no evidence of gambling is found.
1950	Warren Freeman, a noted hotelman, purchases the Quarterdeck Club and attempts to legitimize the business into a high-class operation. The structure sustains major damage in a hurricane that same year, and Freeman sells the club.  The original Stiltsville structure built by Crawfish Eddie is lost in a hurricane.  (The National Hurricane Center did not start naming hurricanes until 1953.)
1950s	Proposals to develop the upper keys and to build a causeway from Key Biscayne to Soldier Key, Ragged Keys, Sands Key, and Elliott Key lead to public concern about undeveloped keys, eventually resulting in establishment of Biscayne National Monument.  As Key Biscayne grows, the residents complain that Stiltsville represents an eyesore. They refer to the Stiltsville residents as squatters and complain that they do not pay taxes.
1960	Stiltsville reaches its greatest size, 27 buildings.  After Hurricane Donna, seven structures are left.
1961	Quarterdeck Club burns down on November 6.

## PURPOSE AND NEED FOR THE PLAN

Early 1960s	State of Florida considers moving the Stiltsville residents out.
1968	Biscayne National Monument is established on October 18.
1960 to 1974	Additional structures are built, so that in 1974 Stiltsville includes 14 structures.
1976	State of Florida establishes leases with individual leaseholders, which expire on July 1, 1999.  Biscayne National Monument is expanded by 8,738 acres of land and water on October 26.
1978	General management plan for Biscayne National Park is issued.
1980	The unit is redesignated as Biscayne National Park and its northern boundary expands to include the Stiltsville area on June 28.
1983	Updated general management plan for Biscayne National Park, following the language in the leases, states that all Stiltsville structures will be removed when the leases expire in 1999.
1985	State of Florida transfers submerged state-owned lands within the expansion area, including those in the Stiltsville area, to the federal government.
1992	Hurricane Andrew damages all but seven of the structures to the extent that they are removed.
1999	The first in a series of standstill agreements is established. The final agreement expires March 31, 2001.
2001	Settlement agreement establishes right of occupancy to the leaseholders until March 31, 2002.  Updating of the general management plan, which will direct management of Biscayne National Park for the next 15 to 20 years, begins. Provisions of the final general management plan amendment for Stiltsville will be incorporated into the new general management plan.
2002	Special use permits allow former leaseholders to use the structures while the general management plan amendment is completed.

## IMPACT TOPICS

Impact topics focus the planning process and the assessment of potential consequences of the alternatives. *Director's Order #12 and Handbook* (National Park Service 2001a) lists impact topics that must be considered, based on requirements in such sources as federal legislation, executive orders, and the Council on Environmental Quality guidelines for implementing the National Environmental Policy Act (CEQ 1978). Other impact topics are identified based on regional or park-specific concerns, or as a result of scoping.

For impact topics that were retained, the public involvement process identified activities or conditions at Stiltsville that were of concern. These issues are briefly summarized below. More detailed information is provided under “Methodology” for each impact topic in the “Environmental Consequences” section. The issues served as the basis for the impact analysis.

During public participation, stakeholders identified numerous goals for protecting the environment and enhancing social or economic conditions. These goals were consolidated into 16 objectives that the general management plan amendment should meet. The objectives of the plan with regard to each of the impact topics are identified below. The ability of each of the alternatives to meet each of the objectives was analyzed as part of the alternatives evaluation process.

### **Water Quality**

Protection of water quality is mandated both by legislation and executive order. Water quality is of particular importance at Stiltsville because Biscayne National Park is designated by the state legislature as an Outstanding Florida Water. Water quality issues were associated with sediment disturbances, the introduction of contaminants such as sewage and toxic chemicals, and changes in public attitudes and behavior regarding water quality resulting from education received at Stiltsville.

Two water quality objectives were identified for the general management plan amendment:

Water pollutants associated with the use of the structures and watercraft emissions are managed to comply with state and Clean Water Act antidegradation policies, goals, and regulations.

Aquatic organisms, including seagrasses, receive protection from activities associated with the use of the structures, including sediment disturbances, to ensure the viability of Biscayne Bay ecosystems.

### **Biological Resources**

Issues identified for biological resources include both direct effects and indirect effects from activities at Stiltsville:

Direct effect issues include such concerns as adverse impacts to seagrass beds from boats that run aground while accessing Stiltsville and deleterious effects on animals from trash from the structures.

Indirect effect issues include effects on birds and aquatic life from changes in water quality and the effects of increased public awareness about the biological resources of the bay.

The public participation process identified three objectives for biological resources that should be met by the general management plan amendment:

Activities associated with the use of the structures occur in a manner that minimizes unwanted effects on aquatic resources and protects birds, fisheries, other wildlife, and organisms, including endangered or threatened species, and their habitats.

The close proximity of the structures to the resource is used to educate the public and enhance their understanding of the fragility of the Biscayne Bay marine environment.

Biota are protected from adverse effects from contaminants that could be released from the structures.

### **Endangered or Threatened Species**

Most of the issues relating to endangered or threatened species mirror the issues identified for all biological resources. In addition, concerns were expressed about deleterious effects on endangered or threatened species from collisions with boats, and loss of habitat, particularly seagrass beds.

The general management plan amendment should meet the following objective for endangered or threatened species:

Endangered or threatened species are protected from harmful interactions and human-caused effects associated with Stiltsville visitors and watercraft.

### **Ecologically Critical Areas**

Designated essential fish habitat and habitat of particular concern are resource attributes that cumulatively are considered to be ecologically critical areas within the Stiltsville footprint. Most of the issues relating to ecologically critical areas focus on the effects of activities at Stiltsville on water quality and on seagrass beds. Direct effect issues included such concerns as effects on seagrass beds from boats that run aground while accessing Stiltsville, and impacts from trash and hazardous materials that originate from the structures or from construction activity.

The general management plan amendment should meet the following objective for ecologically critical areas:

Essential fish habitat is protected from activities associated with use and renovation of the Stiltsville structures and access by watercraft.

### **Cultural Resources**

Cultural resources issues include the potential for undesirable effects on submerged cultural resources from vandalism, construction activities, or inadvertent exposure of the resources by increased erosion. Issues also include opportunities for improved education of the public about the area's historical and prehistorical resources.

The general management plan amendment should meet the following objective for cultural resources:

Submerged cultural resources are protected. Any renovation, demolition, or construction in the Stiltsville vicinity complies with Section 106 of the National Historic Preservation Act.

### **Visitor Experience and Visitor Safety**

A key visitor experience issue focuses on opportunities to provide private, social experiences versus public experiences such as education and interpretation. The use issue evaluates total visitor days and how many people would be included in each user group. Another issue involves providing experiences in the bay environment to members of groups with limited access to this type of setting, including people with physical, mental, or economic limitations.

Safety issues include the structural soundness of the facilities, the potential for overloading the structures, and the presence of safety features such as railings. The safe transport of visitors to and from the site also is of concern.

The public participation process identified two objectives for visitor experience and visitor safety that should be met by the general management plan amendment:

A high-quality, safe, educational, balanced, diverse, and accessible (general access and disabled access) public visitor experience is provided at Stiltsville.

Information is effectively conveyed to the public about the area's history as well as its natural and cultural resources, including those in the immediate Stiltsville vicinity and at nearby locations, such as Soldier Key and Key Biscayne.

### **Sound Environment/Soundscape**

The primary issue with regard to the sound environment is the compatibility of noise generated at the Stiltsville structures with the character of a national park. Other issues include generation of construction noise from renovation of the Stiltsville structures and the opportunity to provide an educational experience about noise and the natural soundscape.

Two objectives regarding sound and the noise environment were identified for the general management plan amendment:

Human-caused intrusions on the natural soundscape are minimized.

The structures' location close to the environment is used to teach the public about the importance of preserving the natural soundscape.

### **Visual Resources**

A key visual issue is the number of people who have the opportunity to enjoy the visual resources from Stiltsville. These issues included the presence of Stiltsville within the natural viewshed for land-based viewers.

Two objectives for visual resources were identified for the general management plan amendment:

The unique visual character of Stiltsville is maintained.

The natural seascape viewshed is restored when the structures can no longer be sustained without rebuilding under the guidelines established in this plan (see the Criteria Used to Determine whether a Damaged Structure Should Be Removed or Repaired figure).

### **Park Operations**

An important issue for Biscayne National Park is the need for a base for park operations and visitor services in the northern portion of the park. These could include enforcement, visitor services, education, research, and resource management. An associated issue involves additional staff requirements to provide these services.

Rehabilitating, maintaining, and operating the Stiltsville structures would incur costs. Issues were raised about the costs of the alternatives and opportunities to obtain funding from alternate sources.

Two park operations objectives were identified for the general management plan amendment:

Providing a base for park operations in the northern portion of the park.

Improving the integrity of the structures and providing regular preventative maintenance to minimize the need for cleanup following major storms.

### **Socioeconomics**

Public involvement raised questions about effects on tourism, retail operations, and commercial operations, including the costs related to construction on the structures.

The general management plan amendment should meet one socioeconomic objective:

The park works cooperatively with concessioners, local businesses, and organizations to provide services and visitor opportunities.

### **ISSUES ELIMINATED FROM FURTHER DISCUSSION**

*Director's Order #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making* (National Park Service 2001a) lists 13 impact topics that must be considered in an environmental impact statement. If they are judged to be not applicable to the federal action being evaluated, they should be included in the discussion of issues and impact topics to be dismissed from detailed evaluation by the analysis.

The impact topics identified below have been dismissed from further consideration because the range of alternatives would have no effect on these resources or because the impacts have been evaluated within another topic. Some of the impact topics were dismissed because they clearly are not applicable. For example, prime and unique farmlands do not occur at Stiltsville, which is in a marine environment.

**Air Quality:** Scoping did not identify air quality as an impact topic of concern. In addition, when air emissions associated with activities at Stiltsville (primarily emissions from boat engines and generators used on the structures) are compared to air emissions from boats in the Biscayne Channel or to air emissions from all sources in the Miami area, neither of the alternatives would result in a substantial volume of emissions. Also, winds in the vicinity typically disperse emissions in the Stiltsville area very quickly.

**Prime and Unique Agricultural Lands:** Prime farmland has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Unique agricultural land is land other than prime farmland that is used for production of specific high-value food and fiber crops. Both categories require that the land is available for farming uses. Lands within Biscayne National Park are not available for farming and, therefore, do not meet the definitions.

**Soils:** Erosion, which leads to loss of soil fertility and the soil resource in land-based systems, is not applicable to the marine setting beneath Stiltsville. Protection of the bay bottom as the substrate that supports vegetation, particularly seagrasses, is included with biological resources.

**Wetlands and Floodplains:** The project area is composed of a submerged marine environment which is dominated by seagrass beds. It does not meet the U. S. Army Corps of Engineers definition of a wetland, but is classified as a special aquatic site that is afforded protection under the Clean Water Act. The effects of alternative actions on seagrass beds are considered in the “Biological Resources” section. The area does not meet the Executive Order 11988 criteria for protection of floodplains.

**Wilderness:** According to *Management Policies* (National Park Service 2000b), proposals having the potential to impact wilderness resources must be evaluated in accordance with National Park Service procedures for implementing the National Environmental Policy Act. Because the Biscayne National Park does not have any designated wilderness areas, this impact topic is dismissed.

**Conflicts with Land Use Plans, Policies, or Controls:** The project area is entirely within the boundaries of Biscayne National Park and does not include any non-National Park Service lands. Therefore, there are no conflicts with any other land use plans, policies, or controls. However, other land use plans, policies, and controls were considered in the cumulative effects evaluation for each impact topic (see “Cumulative Actions” in this chapter). In addition, conflicts with land use plans, policies, and controls will be considered in the NEPA document prepared to support the design and construction to refurbish the Stiltsville structures when the provisions of this general management plan amendment are implemented.

**Energy Requirements and Conservation Potential:** Scoping did not identify energy requirements and conservation potential as an impact topic of concern. In addition, when compared to energy requirements for boats in Biscayne Bay or to energy use throughout the Miami area, energy used for boat engines or for generators on the structures is negligible. Regardless, the proposed action includes several provisions for energy conservation and environmentally friendly construction.

**Environmental Justice:** Executive Order 12898, “General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” requires that all federal agencies

address the effects of policies on minorities and low-income populations and communities. None of the alternatives would have disproportionate health or environmental effects on minorities or low-income populations as defined in the Environmental Protection Agency's *Draft Environmental Justice Guidance* (July 1996).

**Indian Trust Resources:** Indian trust assets are assets that the United States holds and administers for Indian tribes. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes. Indian trust resources would not be affected by management or use in the Stiltsville area. Therefore, this impact topic was eliminated from further consideration.

**Natural or Depletable Resource Requirements and Conservation Potential:** This category was not identified as an impact topic of concern by scoping. Nonetheless, it is covered under the impact topic "Sustainability and Long-Term Management" in the consideration of irreversible or irretrievable commitments of resources that would be involved should the alternative be implemented.

## CONNECTED, CUMULATIVE, AND SIMILAR ACTIONS

### Cooperating Agencies

This final general management plan amendment and environmental impact statement does not have any cooperating agency involvement, as defined in the Council on Environmental Quality's (CEQ 1978) "Regulations for Implementing Procedural Provisions of the National Environmental Policy Act." However, numerous agencies were consulted in the preparation of this document, as described in the "Consultation and Coordination" section.

### Connected and Similar Actions

Connected and similar actions for this final general management plan amendment refer to other planning projects in the vicinity. They include other National Park Service planning efforts and planning currently in force or underway by entities other than the National Park Service. Connected and similar actions include, but are not limited to:

Current preparation of an updated general management plan for Biscayne National Park. The general management plan will provide the overall management framework for the park, and this general management plan amendment will be integrated as a planning component.

The Biscayne National Park Soundscape Management Plan.

The Biscayne National Park Fisheries Management Plan.

The National Oceanic and Atmospheric Administration Fishery Management Plan Amendments.



The Surface Water Improvement and Management Plan for Biscayne Bay and the proposed wetland restoration and stormwater retrofit projects.

*Biscayne Bay Aquatic Preserve Management Plan (Draft)* (Metro-Dade County Planning Department 1986).

*Biscayne Bay Card Sound Aquatic Preserve Management Plan* (Florida Department of Natural Resources 1991).

The Comprehensive Everglades Restoration Plan and other directions set by the south Florida Ecosystem Restoration Task Force.

Everglades Surface Water Improvement and Management Plan and proposed wetland restoration projects.

The Florida Keys National Marine Sanctuary Management Plan.

The South Atlantic Fishery Management Council's (1998) Final Habitat Plan for the South Atlantic Region, which defines essential fish habitat requirements for fishery management plans.

*Draft Florida Manatee Recovery Plan* (U.S. Fish and Wildlife Service 1993).

*Biscayne Bay Partnership Initiative Final Report* (2002), which includes *A Bright, Great Bay* (policy report) as well as reports from the Social and Economic, Science, Management, and Regulations Survey Teams.

A good discussion of many of the plans in the Biscayne Bay region that generally affect the Stiltsville area is provided in *An Update of the Surface Water Improvement and Management Plan for Biscayne Bay* (Mulliken and VanArman 1995). The updated general management plan for Biscayne National Park, which currently is in preparation, will include information on how these plans specifically affect Biscayne National Park, including the Stiltsville area.

### **Cumulative Actions**

Cumulative actions are actions by the National Park Service or others that may have additive impacts on one or more of the resources of Biscayne National Park and the Stiltsville project area. The assessment of cumulative effects includes past, current, and reasonably foreseeable future projects. The actions described below were included in the cumulative impact analyses in the "Environmental Analysis" section of this general management plan amendment and environmental impact statement.

*Past and Future Urbanization of the Miami-Dade County Area:* Biscayne National Park and Biscayne Bay are often referred to as "Miami's backyard." The metropolitan area wraps around the west and north parts of the park, resulting in a large protected natural area adjacent to one of the fastest growing urban areas in the country. Changes that were considered to determine the effects of park management within the larger regional setting included, but were not limited to:

Past conversion of land from the predominant Everglades ecosystem to agricultural use and continuing development of these lands into subdivisions.

Diversion of surface water into canals that drain into the bay.

Increases in recreational boat licenses of more than 400 percent in the past 10 years (Ault *et al.* 2001), with similar increases in recreational boat use throughout the park and in the Biscayne Channel.

Continuing urbanization of the metro area will affect the resources of Biscayne National Park, regardless of management actions taken by the National Park Service within the park. Growth in the urban population and the number of urban residents recreating in and around the park will be particularly important.

*South Florida Ecosystem Restoration:* The interrelationship of and balance between the natural and built environment in south Florida has been the subject of much planning and manipulation throughout the 20th century. In particular, less than 50 percent of the original wetlands of the Everglades remain after channelization for agriculture and urban development.

Historic changes in water flows have adversely affected the natural systems upon which much of the south Florida region depends. Therefore, a program under the coordination of the south Florida Ecosystem Restoration Task Force is being implemented to restore water flows by restoring the natural hydrology. The Comprehensive Everglades Restoration Plan (CERP) passed by Congress in 2000 includes this program. The CERP involves 63 major water resource delivery projects, including seven that will affect or influence Biscayne National Park.

This program includes more than 30 federal, state, and tribal organizations; 16 counties; and 100 cities. The National Park Service and its four south Florida units, including Biscayne National Park, participate in the south Florida ecosystem restoration initiative.

*Surface Water Improvement and Management:* In 1987 the Florida Legislature passed the Surface Water Improvement and Management Act (Chapter 373.451-373.459, F. S.). This act identified priority water bodies, including Biscayne Bay, within the state that would benefit from study and planning efforts, and provided financial backing for the implementation of water quality and ecosystem improvement projects.

The original plan was published in 1988. The critical issues identified in the plan were the preservation and improvement of water quality, water quantity, and environmental resources. The first plan implemented data collection programs and identified and supported the construction of several critical water quality improvement projects.

A revised Surface Water Improvement and Management Plan was published in 1995 (Mulliken and VanArman 1995). Data in the new plan indicate that while projects implemented in support of the first plan are already exhibiting detectable improvements in water quality, targeted goals are still not met. The revised plan report identified 29 water quality projects, 10 new water quantity projects, and 9 new environmental protection projects. Twenty-three of these projects were designated as priority projects and may be already under construction or completed. All of the proposed projects will have an effect on the dynamics of Biscayne Bay, either directly or indirectly.

## **ALTERNATIVES**

### **FORMULATION OF THE ALTERNATIVES**

The general management plan that currently is used to administer Biscayne National Park (National Park Service 1983) points out that the leases between the state of Florida and the leaseholders for the Stiltsville structures were nonrenewable. That general management plan states, “when they [the leases] expire in 1999 all man-made structures will be removed.”

More recently the National Park Service determined that there was broad public interest in the fate of the structures, including expressions of support for their public use. Therefore, the National Park Service implemented a multi-stage planning process to identify and recommend future public uses consistent with National Park Service policy.

A key element of the planning process involved obtaining input from interested organizations and individuals. The “Consultation and Coordination” section describes the public involvement process for the general management plan amendment.

The National Park System Advisory Board advised the National Park Service that the Stiltsville Advisory Committee be created, which the “Consultation and Coordination” section also describes. This ad hoc organization was formed to help guide the initial steps in the planning process, and to identify and recommend appropriate future public uses of Stiltsville.

Input from the Stiltsville Advisory Committee, public scoping, leaseholders, regulatory agencies, and other stakeholders was used to develop the objectives that should be addressed by the general management plan amendment. These 16 objectives were presented previously in the “Impact Topics” section.

### **FORMULATION OF THE PROPOSED ACTION**

The proposed action presented in this general management plan amendment evolved from a process that included input from the Stiltsville Advisory Committee and all stakeholders identified in the “Consultation and Coordination” section.

The development of the proposed action culminated on May 29, 2002 when the National Park System Advisory Board adopted the recommendations of the Committee. A copy of the committee recommendation, which forms the foundation for the description of the proposed action, is provided in Appendix C.

### **FORMULATION OF THE NO ACTION ALTERNATIVE**

To meet the requirements of the National Environmental Policy Act and the Council on Environmental Quality guidelines for implementing the Act (CEQ 1978), this general management plan amendment and environmental impact statement includes the alternative of no action. For Stiltsville, this alternative would involve continuing current management policy as prescribed by the 1983 general management plan that states “when they [the leases] expire in

## ALTERNATIVES

1999 all man-made structures will be removed.” The no action alternative therefore addresses the action of removing the structures and the long-term conditions that will result following removal.

### **CONSIDERATION OF OTHER ALTERNATIVES**

Several other alternatives were proposed during the alternatives development process. Brief descriptions of each of these, and the reasons they were not retained for detailed evaluations, follow the detailed descriptions of the proposed action and the no action alternative.

### **MITIGATION**

Mitigation is a key concept in planning because it accommodates visitor and park operations interactions with natural and cultural resources and their tolerances for disturbances. Mitigation and best management practices are regularly used to ensure that Biscayne National Park’s natural and cultural resources are protected and preserved for future visitors.

In the legislation that created the National Park Service, Congress charged it with managing lands under its stewardship “in such manner and by such means as will leave them unimpaired for the enjoyment of future generations”(National Park Service Organic Act, 16 USC 1). As a result, the National Park Service routinely evaluates and implements mitigation whenever conditions occur that could adversely affect the sustainability of park resources. The proposed action considers mitigation, such as requiring training for boat operators accessing the structures or the implementation of best management practices during construction and renovation, throughout its analyses.

## **ALTERNATIVE A: PROPOSED ACTION – NON-PROFIT (IRS 501 (C) (3)) ORGANIZATION DEVELOPMENT AND MANAGEMENT TO PROVIDE FOR PUBLIC USE**

### **CONCEPT**

Under Alternative A, one or more organizations or individuals may create a single non-profit organization under the regulations of the Internal Revenue Service and non-competitively enter into an appropriate arrangement with the National Park Service for the management and use of the Stiltsville structures. The Stiltsville organization would develop, manage, and maintain some or all of the seven existing Stiltsville structures to provide broad public access and diversity of use consistent with National Park Service policy and best management practices for environmental protection. The National Park Service would maintain and manage any structures needed to carry out National Park Service functions. Alternative A would include a mix of uses that may include:

Public functions and services including non-profit organization functions, public and private education programs, scientific research activities, an artist-in-residence program, professional meetings and retreats, day use, and rustic campsites.

National Park Service functions, including interpretation, resource management, and ranger activities.

The process of creating the non-profit organization and the operation of that organization would be carried out by stakeholders who represent a cross-section of the community, including the former Stiltsville leaseholders. Public functions may be provided by other entities through agreements with the non-profit organization. The organization would seek donated funds and grants from a variety of sources, or funds from participating entities to repair, rehabilitate, and operate the buildings at Stiltsville to support the intended uses. They may also generate funds for these purposes through user fees.

### **Public Functions**

*Education Facility:* The mix of uses would include the opportunity to coordinate with the Miami-Dade County public schools or private educational institutions to provide a unique educational experience. Weather permitting, student groups could be transported to Stiltsville for classes and environmental education programs.

For many children, particularly the economically disadvantaged, a visit to Stiltsville could provide a unique and rare opportunity to learn about the bay environment and to gain an appreciation of the interactions between the land and water resources in south Florida.

The structure could be an enclosed classroom space with adjacent decking, or a covered, open-air facility with tables and chairs on an unimproved deck. This facility could host classes of all ages on a wide range of bay- and history-related subjects.

*Research Facility:* Research and resource management in Biscayne Bay is ongoing and increasing as resources are threatened and the importance of the protected environment of Biscayne National Park is better understood. Developing one of the structures into a science station would provide direct access to the resources of the bay, providing a staging area for a wide variety of sampling and monitoring of numerous bay resources. The facility could also be a teaching facility for local schools such as the Maritime and Technology High School Academy, which focuses its curriculum on marine sciences. Appendix C includes a proposal for a cooperative arrangement between the Maritime and Technology High School Academy, the Ransom Everglades School, and the Rosensteel School of Marine and Atmospheric Sciences of the University of Miami to sponsor such a facility.

Research and science education opportunities might include field study with students and teachers living on the structure for periods of up to several days, focused research involving on-site sampling and analyses and maintenance of research plots in the bay, and automated acquisition and analysis that would provide scientific data for specific research projects.

*Meeting Space:* A structure could be developed to accommodate small meetings or retreats, which could be hosted by local businesses and corporations or by civic and non-profit organizations. Meetings may not be related in their purpose to Stiltsville or the park, but simply take advantage of the unique and inspirational setting to enhance the group's dynamics.

*Artist-in-Residence:* National park settings offer quiet and inspiration, attributes conducive to the creative pursuits of artists and writers. One structure might be rehabilitated to provide for overnight and longer-term needs (two to three weeks at a time) of one or two people. The structures located away from the Biscayne Channel would be most appropriate for a resident artist due to their relative seclusion.

*Rustic Overnight Campsite:* One or more of the structures could be renovated to serve general public overnight backcountry use on a reservation basis. Primitive facilities would be provided and all waste handling would be carry-in/carry-out.

### **National Park Service Functions**

With the implementation of Alternative A, the National Park Service would have an increased presence in the northern portion of the park.

*Visitor/Interpretative Center:* The visitor/interpretive center would be the focal point in Stiltsville for the general park visitor. It could be co-located with another facility, such as the satellite park office. Visitors might arrive via a commercial boat service (water taxi) or by private boat.

Information and educational opportunities could focus on the ecology of the bay, Stiltsville and its history, and the significance of water and land interactions in south Florida. Services, facilities, and exhibits would be oriented to serving small groups of visitors and would not require equipment or materials incompatible with sustainable uses of the structure.

Regardless of the structure chosen for this use, redesign and structural alterations would be needed to provide compliance with the Americans with Disabilities Act. Modifications would not change the current footprint of the selected building.

*Park Satellite Office:* Biscayne National Park’s operations and management functions associated with public use of Stiltsville could be accommodated in one of the structures. Required space might include an office and limited storage. The structure could support activities such as patrols and enforcement, resource management, and maintenance. The satellite park office might also serve some of the broader management and visitor contact needs of the northern portion of the park. At some point in the future, a park operations and visitor contact facility may be provided on the mainland, as recommended by many public comments and government partners, reducing the demands placed on the Stiltsville facility.

This alternative would require additional National Park Service staffing as follows:

One permanent park ranger to monitor user activity and provide law enforcement.

One permanent interpretive park ranger to serve as point of contact for the National Park Service.

One part-time resource management specialist to support park resource management activities and to monitor the renovation and subsequent uses associated with Stiltsville.

One part-time administrative assistant to provide support activities for the National Park Service operations at Stiltsville.

One part-time maintenance worker to maintain the satellite facility.

## **USER CAPACITY**

The capacity of the Stiltsville area would be set by the types of uses established for each structure. For example, an education facility might handle groups of 30 school children once or twice a day, while an artist-in-residence program might have only one or two people who stay for a week or more.

Table 1 presents estimated use levels at Stiltsville, assuming that each structure is used for a different purpose. If more than one structure were committed to a high-volume use such as education, the use levels would increase accordingly. The values in Table 1 include only direct uses of the structures and do not include boating activities. The values also include about 1,000 use days by park staff, because these contribute to the potential adverse affects to the environment by making boat trips and generating wastes that must be properly managed. Based on the mix of uses shown in the table, the structures would be used by about 16,500 to 23,500 members of the public annually.

## **PROTECTING THE RESOURCES OF THE PARK**

### **Access**

Boat impacts to bay bottom resources such as seagrasses include groundings and propeller scarring in the shallow areas of the flats around Stiltsville. To minimize resource damage, access to Stiltsville would be controlled. Measures would include the following:

**TABLE 1: ESTIMATED USE OF INDIVIDUAL STRUCTURES  
UNDER ALTERNATIVE A**

<b>Use of Structure</b>	<b>Number of People per Day</b>	<b>Frequency of Use (roundtrip from the mainland)</b>	<b>Boat Trips per Year</b>	<b>Maximum Annual Use (People per Year)</b>
Education Center	30 Students and Faculty	360 days/yr 1 boat trip/day	360	10,800
Interpretive Center	10 to 20 Visitors 1 Staff	360 days/yr 5-10 boat trips/day	1,800-3,600	3,960-7,560
Research Facility	3 to 5 Scientists	360 days/yr 1-4 boat trips/day	360-1,440	1,080-1,800
Meeting Facility	5 to 15 Participants	300 days/yr 1-3 boat trips/day	300-900	1,500-4,500
Artist-in-Residence	1 or 2 Residents	210 days/yr 1 boat trip/day	210	210-420
	1 to 5 Guests	90 days/yr 1 boat trip/day	90	90-450
Satellite Park Office	2 Staff	365 days/yr 4 boat trips/day	1,460	730
Total	53 to 80		4,580-8,064	17,910-24,800

Stiltsville facilities open to the public, such as the visitor/interpretive center, would be housed in structures close to the Biscayne Channel to minimize the need for navigation through non-marked channels in the shoals.

Access to some Stiltsville structures might be limited via reservation or special agreement, such as the artist-in-residence program, to maintain a specific visitor carrying capacity or type of visitor experience.

Water access to some structures or programmed activities might be limited to vessels operated by licensed, commercial operators, or by licensed operators employed by the organization providing the use of the structure.

Researchers or non-profit groups might be required to demonstrate proficiency in handling a boat to ensure user safety and protection of the park's resources.

Access routes leading to/from the structures from adjacent channels may be demarcated by buoys to better facilitate navigation and minimize disturbance to adjacent seagrass beds.

### **Fuels, Hazardous Material, and Waste**

Occupants, operating organizations, and visitors would not be allowed to store hazardous or toxic materials (such as fuel for back-up generators) on the structures, except in very limited quantities and with secondary containment while people actually were using the structure. Waste



management would be strictly controlled and appropriate methods for storage and removal (such as double-walled containers and carry-in/carry-out policies) would be required for solid waste, sanitary waste, and toxic materials. Construction materials would be as non-contaminating as possible, and would minimize use of materials that are pre-treated with hazardous chemicals.

Wastewater (vault toilets) and garbage collection/disposal management would be strictly controlled and appropriate methods for storage and removal would be required. All wastewater and garbage would be disposed of on the mainland in licensed wastewater treatment facilities and licensed landfills.

### **Other Resource Protection Measures**

Two-cycle outboard engines, currently in use by some users, discharge unburned fuels into the bay. All users would be encouraged to follow the National Park Service lead and begin using fuel-injected or four-cycle engines to reduce the adverse effects of fuels on bay waters. Stipulations would also include such measures as limiting the number of boats that could be tied to the structure or anchored in the vicinity of a structure.

Fishing line, plastic bags, six-pack plastic beverage rings, and other trash that can entangle animals or can float or be suspended in the water can negatively affect birds and marine life, and impact reefs when it is carried offshore by outgoing tides. Discarding these materials from the structures would be prohibited. In addition, the non-profit organization could use the education and interpretive forum available at Stiltsville to emphasize the importance of keeping these materials out of the bay waters.

### **CONDITIONS FOR REMOVAL OF STRUCTURES**

If a structure was severely damaged, as by hurricane or fire, a decision on whether the structure would be removed or restored would be made based on the process provided in the Criteria Used to Determine whether a Damaged Structure Should Be Removed or Repaired figure in Appendix B. These same criteria would be applied to Alternatives B, C, and D.

### **PROTECTING HEALTH AND SAFETY OF THE PUBLIC**

The measures identified above to protect the park resources would also protect the health and safety of the public. For example, proper wastewater handling and garbage disposal would ensure that toxic materials, sewage, and garbage would not enter the bay waters, where in high concentrations they could cause a health threat to area visitors and wildlife. Similarly, the use of commercial boat companies with Coast Guard-inspected watercraft and competent captains would help ensure the health and safety of visitors in transit.

Structures that would be used by the general public, particularly those dedicated to education and the visitor/interpretive center, would be designed to provide adequate protection for children and visitors with physical disabilities. This would include compliance with Americans with Disabilities Act requirements, provision for appropriate railings, and design of docks that would allow people to disembark from boats easily and safely.

Adequate space would be provided on one stilt structure (satellite park office or visitor/interpretive center) or on the adjacent mainland (staging facility) to allow storage for enforcement, communications, resource inventory and monitoring, search and rescue, and emergency response supplies and equipment. The availability of this equipment along with trained park staff in the northern portion of the park would enhance the health and safety of park users at Stiltsville and throughout the area.

### **SUSTAINABLE, ENVIRONMENTALLY COMPATIBLE DESIGN PRINCIPLES**

Renovation of the structures would maximize the use of recycled materials and would avoid the use of timber treated with toxic chemicals that could, over time, leach into the water. Other design elements would include avoiding features that would make the structures attractive perching places for birds, such as horizontal railings or flat-topped posts.

Renovations would not increase the size or footprint of the structures. The Stiltsville structures would require regular upkeep and cyclic repair and maintenance. Water storage tanks, wastewater vault storage systems, and solar power or small generators would all be designed to minimize effects to the environment, as well as for ease of maintenance and periodic repair or replacement.

### **FINANCIAL RESPONSIBILITY FOR SELF-SUSTAINING OPERATION OF STILTSVILLE**

Regardless of use, the stilt structures would be financially self-sustaining. Depending on the type of use and the type of providing organization, agreements, contracts, or other appropriate operating arrangements would ensure that management and maintenance costs would be paid entirely by the user organization, or, where appropriate, operations and maintenance costs might be borne directly by the Stiltsville organization. Agreements with operating organizations would authorize the charging and retention of fees that would be used for operation and upkeep of the structure. Initial construction costs to bring the structures up to standards for their intended uses would be borne by the non-profit organization.

The cost to renovate each structure would depend on its intended use. Structures used for tenting and reserved for primitive day and overnight use could be renovated for approximately \$200,000. Facilities used for school groups, conferences, environmental education, field schools, or research activities that provided visitors with potable water, bathrooms, and lighting could require as much as \$500,000 to renovate.

Operations and maintenance costs would be the responsibility of the non-profit organization except for those structures used by the National Park Service for a satellite park office or for interpretive or educational purposes. Operation costs for a National Park Service facility would be based on the requirements of four full-time-equivalent staff positions.

## **ALTERNATIVE B: NATIONAL PARK SERVICE DEVELOPMENT AND MANAGEMENT TO PROVIDE FOR PUBLIC USE**

### **CONCEPT**

Under Alternative B, the National Park Service would renovate, manage, operate, and maintain the seven existing Stiltsville structures. The range of uses under this alternative would be similar to Alternative A, including the availability of some structures for use by private individuals or groups through a park reservation system.

Similar to Alternative A, the National Park Service would renovate, operate, and maintain one structure to establish a presence in this northern portion of the park to monitor and enforce the leasing program and provide user information and limited interpretive programs. The National Park Service would also establish a landside administrative and visitor contact facility at some location that would support the Stiltsville facilities and functions. Staffing would be the same as Alternative A.

User capacity, staffing, conditions for removal (hurricane damage or fire) and actions related to protecting resources, protecting public health and safety, and sustainable environmental design principles would be the same as Alternative A.

### **FINANCIAL RESPONSIBILITY FOR SELF-SUSTAINING OPERATION OF STILTSVILLE**

The National Park Service would initiate a market analysis to determine the feasibility of having concession contracts to manage and operate Stiltsville for selected uses. This approach would allow the National Park Service to benefit from franchise fees that would then be used for capital improvements and maintenance costs. Other uses such as a research facility or educational facility may be operated under other appropriate operating arrangements with the National Park Service. The National Park Service would also seek federal and donated funds and user fees to repair and rehabilitate structures used to support a variety of education and interpretation opportunities. The actual day-to-day management and maintenance would be performed by the National Park Service or by commercial operators under concession contracts or other appropriate arrangements to the National Park Service, depending on the determination of use and management responsibility. Where possible the National Park Service would seek to make the structures self-sustaining.

## **ALTERNATIVE C: COMPETITIVE LEASING TO PROVIDE FOR PUBLIC AND PRIVATE USE**

### **CONCEPT**

If an acceptable non-profit organization cannot be found, this alternative would become the preferred. The Stiltsville structures, with the possible exception of one structure designated for National Park Service use, would be competitively leased for private use based on current authorities (36 CFR, Part 18 as amended by regulations published in the *Federal Register* on December 27, 2001). The National Park Service would issue, approve, monitor, and enforce the leasing program. All potential future lessees, including the former leaseholders, would compete on the same basis for the right to lease these structures. The purposes for which the structures could be leased would be similar to the range of uses defined in Alternative A, as well as for private uses similar to those under the former non-renewable leases. The Request for Proposal (RFP) would include scoring factors weighted towards responses from individuals or groups that would use the structures for park mission type purposes.

As in Alternative A, the National Park Service could exercise the option of renovating, operating, and maintaining one structure to establish a presence in this northern portion of the park to monitor and enforce the leasing program and provide user information and limited interpretive programs. Staffing would be the same as Alternative A.

If a sufficient number of lease proposals are not received that would allow for public use or designate uses that meet the park mission, then leases could be granted to individuals or groups for their exclusive use. The nature and frequency of use by these groups would not differ substantially from practices that have occurred since 1985 when the National Park Service acquired the land on which the structures are built.

All future leaseholders, regardless of type of use, would be responsible for renovating, operating, and maintaining their respective structures to specified standards set by the National Park Service. Leaseholder responsibility would also include the purchase of liability insurance and the costs of repairs and maintenance of these structures. Leases would include the following types of stipulations:

The leased premises would be used only for purposes prescribed in the lease.

The lessee would not expand the size or footprint of the structure.

The lessee would agree to maintain the structure in a reasonably sound, livable, and attractive condition and would be required to meet state and federal health and safety codes.

### **USER CAPACITY**

In the past, leases have been held by private clubs and organizations, public clubs, corporations, and unaffiliated groups of private citizens, with the leaseholder receiving rights of exclusive use. The structures have been used as campsites and have included such activities as overnight stays,

day recreation, family and business entertainment, and social parties. Group sizes have ranged from two or three people to more than 300 people at one time.

The nature and frequency of use by these leaseholders would not differ substantially from practices that have occurred since 1985, when the National Park Service acquired the land on which the structures were built. However, the number of people on a structure at any one time would be strictly limited under Alternative C compared to the use pattern that formerly took place in the structures, as shown in Table 2.

For those Stiltsville structures used exclusively by leaseholders and their guests the annual capacities would be as shown in Table 2.

**TABLE 2: ESTIMATED USE OF INDIVIDUAL STRUCTURES  
UNDER ALTERNATIVE C**

Typical Use per Structure	Number of People at One Time	Frequency of Use (roundtrip from the mainland)	Boat Trips per Year	Maximum Annual Use (People per Year)
Typical Weekend	6-10	94 days/yr 2-4 boat trips/day	188-376	564-940
Special Weekend <sup>a/</sup>	35-75	10 days/yr 5-10 boat trips/day	50-100	350-750
Typical Weekday	4	130 days/yr 1 boat trip/day	130	520
Times 7 Structures			x 7	x 7
Total			2,576-4,242	10,038-15,470

a/ Special weekends are usually major holidays and periodic occasions with larger groups of guests or members.

The mix of uses associated with this competitive lease concept for public use (Table 1) and individual private use (Table 2) would not be known until leases on all structures have been evaluated and awarded. It is assumed that the total capacity of Stiltsville would be within the range of 10,038 people per year under Alternative C (Table 2) and 24,800 people per year under Alternative A or B (Table 1).

## PROTECTING THE RESOURCES OF THE PARK

Actions to protect park resources would be the same as Alternative A, but would emphasize stipulations in the competitive leases to require that the best construction and management practices be employed in the renovation, use, and maintenance of these structures and all water-related activities associated with their use.

## PROTECTING THE HEALTH AND SAFETY OF THE PUBLIC

Actions to protect public health and safety would be the same as in Alternative A, but would emphasize stipulations in the competitive leases to ensure that occupancy limits would not be

## ALTERNATIVES

exceeded and that the structures would be renovated and maintained in a reasonably sound, livable, and attractive condition. Any remodeling or restoration would have to meet current state and federal building codes. Depending on the designated use, some structures would have to be in compliance with all Americans with Disabilities Act standards. Each leaseholder would be held liable for all injuries associated with the use of the structure.

### **SUSTAINABLE, ENVIRONMENTALLY COMPATIBLE DESIGN PRINCIPLES**

Actions to ensure sustainable, environmentally compatible design principles would be the same as Alternative A, but would emphasize the use of environmentally sustainable building materials for remodeling or renovation.

### **FINANCIAL RESPONSIBILITY FOR SELF-SUSTAINING OPERATION OF STILTSVILLE**

Lessees would have financial responsibility for renovation of their structures, as reflected in the costs presented in Alternative A, and be required to follow National Park Service sustainable guidelines and standards in the design and reconstruction. The National Park Service would provide a substantial portion of the cost to make the buildings structurally sound prior to renovation, such as replacing pilings where needed. Lessees would also assume total financial responsibility for the management, operation, and maintenance of the structures, and would pay “fair market” value for the structures. The National Park Service would assume financial responsibility for only the structure(s) occupied by the park to maintain a monitoring, enforcement, and public contact function. In addition, the leaseholders would pay the National Park Service an annual fee for use of the structures. These provisions would be consistent with current practices.

## **ALTERNATIVE D: NO ACTION – REMOVAL OF THE STILTSVILLE STRUCTURES**

### **CONCEPT**

Under this alternative, at the end of the special use permit or any extension of that agreement, the National Park Service would require the implementation of the provision contained in all the nonrenewable leases at Stiltsville that call for the removal of all man-made structures from Biscayne National Park.

The leaseholders would adhere to standards set by the National Park Service for demolition of the structures and removal of material. These would include operation and anchoring of barges, containment of silt and minimization of bay bottom disturbance, and containment of demolished material. Standards would ensure the least damage to park resources.

Management and operations within the northern portion of the park would occur similarly to current conditions. Operations for all division functions, including resource and visitor protection, interpretation, resource management, science, and maintenance, would originate from park headquarters and the Dante Fascell Visitor Center, the park's main visitor center. These are located at Convoy Point in the southwest part of the park, approximately 22 miles from Stiltsville. Staff would access the site and conduct park operations in the Safety Valve area from boats after traveling from Convoy Point. This would include transport of equipment and staff and would involve minimum response times to needs in the area from 30 to 60 minutes. Contact with visitors in the Safety Valve area would take place intermittently when staff are available in the area. Interpretation of resources that are present in and important to this portion of the park would take place at the Dante Fascell Visitor Center.

The cost to demolish the structures and remove materials would range from approximately \$100,000 to \$150,000, depending on the size and location of the structure.

## **ALTERNATIVES ELIMINATED FROM FURTHER STUDY**

During the public involvement and scoping process, several other alternatives for management of Stiltsville were proposed. These alternatives, and the reasons they were eliminated from further study, are presented below.

### **SHORT-TERM LEASES**

This alternative would involve issuing short-term leases. Under this arrangement, the leaseholder would have little incentive to provide capital development, operation, and maintenance costs because of having little chance of getting a return on the investment.

### **MOTHBALLING**

This alternative would involve letting the structures stand unused in the bay. Leases would not be reissued, and the structures would be off-limits to all park users. This alternative was eliminated from further consideration for the following reasons:

The mothballing of these structures would create an attractive nuisance with people drawn to the site due to the visual appeal of these structures within the bay setting. Vandalism of the structures would most likely increase due to a limited law enforcement presence that would be associated with this alternative.

Without routine maintenance, the structures would fall into disrepair and would pose a serious public safety risk to curious visitors who might choose to trespass on these deteriorating structures.

### **BOUNDARY ADJUSTMENTS TO REMOVE STILTSVILLE FROM BISCAYNE NATIONAL PARK**

There have been numerous proposals to adjust the boundaries of Biscayne National Park to exclude Stiltsville and the surrounding area or portions of the surrounding area from the park. These proposals often include such features as boat traffic across the Safety Valve shoals to provide access and swapping lands within the park, including park areas with lush seagrasses, for biologically less valuable, unvegetated bay bottom in areas outside the current boundaries. All of these boundary adjustment proposals have been eliminated from further consideration for the following reasons:

These actions would create difficult-to-administer gaps in the now-continuous park. Virtually since the creation of the national park system, Congress and the National Park Service have been striving to consolidate lands within park boundaries under National Park Service administration. Boundary adjustments in the Stiltsville area would have the opposite result.

Because the bay surface is virtually featureless, it would be difficult for rangers and visitors to determine where National Park Service jurisdiction would begin and end,



necessitating use of global positioning system (GPS) equipment and accurate maps in every boat to determine the location of the park boundary.

Most boundary adjustment proposals would remove a portion of Biscayne Channel from Biscayne National Park. The channel, which is completely within the park, is a major recreational corridor between Miami, Biscayne Bay, and the open ocean. Splitting jurisdiction of this important waterway between the National Park Service and the state of Florida would confuse users and complicate management of this area and law enforcement action.

An estimated 85 percent of the water that flows into Biscayne Bay comes through the area known as the Safety Valve, shown on the Location map. This area provides an essential stabilizing barrier between Biscayne Bay and the coastal ecosystem to the east. This area has never been dredged, and all the channels have formed naturally (Canzanelli 2001). Cutting new channels in this area through dredging or boats running aground and damaging the seagrass bed could have unpredictable and potentially deleterious effects on the hydrology of the entire bay. During tide changes, water flows through this area at a rate of 80,000 gallons a minute. New channels could change the natural flow of water, removing sand from some sites and depositing it in others. Conversely, the rush of water associated with tides may scour the new channels into deep, wide trenches with strong currents. This could change the flow of water throughout the remainder of the Safety Valve and disrupt the natural processes throughout the area (Canzanelli 2001).

The park actively works to protect seagrass beds, which stabilize the bottom and serve as essential nurseries for many species of marine life. Any boundary adjustment in the Stiltsville area would affect the enforcement of resource protection laws and regulations and could cause major adverse effects to seagrass beds. In areas where new channels were formed, previously undisturbed seagrass beds would be removed. Even if channels were not actively dredged, boats accessing Stiltsville from various directions would run across areas of pristine seagrass that no longer would receive the level of protection afforded by their current location in the park. The cumulative effect of this boat traffic would be to cut new channels through the seagrass and to destabilize the bottom (Canzanelli 2001).

### **PREFERRED ALTERNATIVE**

Alternative A is the preferred alternative. Selection of the preferred alternative was based on the overall ability of the alternative to meet park objectives, support the purpose of the park, and minimize adverse effects to the resources of the park while providing for public use and enjoyment. Each of the action alternatives (A, B and C) have similar environmental effects for many of the impact topics addressed in the environmental analysis. Each of the action alternatives would result in the following:

Benefits would be realized by broad segments of the public through increased public access to the Stiltsville structures and improved education about the surrounding marine resources.

There would be improved ability to deliver important interpretive and educational information to visitors using the northern portion of the park.

The ability to preserve an important and distinctive icon of past and present life in south Florida would exist, as well as an opportunity for the public to experience Stiltsville and learn of its history.

The National Park Service would increase its capability to carry out operational and administrative responsibilities in the northern portion of the park.

In addition, Alternative A would include community stakeholders, through representation on the board of the non-profit Stiltsville organization, along with the National Park Service in the cooperative management of Stiltsville. Alternatives A and C would also allow the operation and maintenance of the Stiltsville structures on a self-sustaining basis, with little or no commitment of federal funds.

## **ENVIRONMENTALLY PREFERRED ALTERNATIVE**

The environmentally preferred alternative is defined by the Council on Environmental Quality (1978) as the alternative that best meets the criteria or objectives set out in Section 101 of the National Environmental Policy Act. The environmentally preferred alternative best meets the following requirements:

Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.

Ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings.

Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.

Preserve important historical, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.

Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The environmentally preferred alternative is the alternative that causes the least damage to the biological and physical environment — the alternative that best protects, preserves, and enhances historic, cultural, and natural resources. This discussion also summarizes the extent to which each alternative meets Section 102(1) of the National Environmental Policy Act, which asks that agencies administer their own plans, regulations, and laws to be consistent with the policies outlined above to the fullest extent possible.

Implementation of Alternative A would offer protection of the surrounding bay environment through implementation of best management practices for maintenance and operations of the structures and through controlled access to and use of the structures. Operating requirements would include recycling and use of renewable energy sources. Additionally, increased public education and enhanced research would improve the public's knowledge and appreciation of Biscayne Bay. The Stiltsville non-profit organization would act to improve the structures to enhance public safety and access to the structures within the surrounding seascape, and would provide a wide range of beneficial public uses for civic and youth groups, the general public, the research and education communities, and National Park Service park administration. This would occur in a manner that was sustainable within the bay environment. Through enhanced access for the general public regardless of affiliation with a particular group, a broad range of community members would be able to visit and benefit from the Stiltsville structures and their location within a protected natural environment.

Alternative B would have impacts on park resources and visitor use and experience at Biscayne National Park very similar to those described for Alternative A. Management of the site by

## ALTERNATIVES

National Park Service would place a greater portion of the costs of rehabilitation and operations on the federal government.

Alternative C would also have impacts on park resources and visitor use and experience similar to those described in Alternative A; however, realization of many of the public benefits described in Alternative A would depend on viable bids to provide public access being offered to and accepted by National Park Service from private individuals or entities. A high number of leases offering services similar to those provided under Alternative A would result in broad public benefit. Leases that provide only exclusive private use would serve to limit public access and thus the public benefit that would be provided by the Stiltsville structures.

Alternative D, the no action alternative, would satisfy the six requirements of Section 101 of the National Environmental Policy Act. Alternative D would remove the structures and would provide the greatest potential to restore the bay's natural resources and protect natural and cultural resources over time. Under Alternative D, the area available for seagrass bed regeneration would increase which would provide habitat and forage for numerous wildlife and bird species including endangered and threatened species as well as enhance ecologically critical areas. Reduced use of the area by visitors would provide enhanced protection to submerged cultural resources. Removal of the structures would also eliminate safety hazards presented by their use. Although removal of the structures would eliminate their use by the public and the aesthetic contribution that many feel they make, Alternative D would continue to provide for a wide range of recreational opportunities in the Stiltsville area. Compared to the action alternatives, removing the structures under Alternative D would result in a loss of an opportunity to present the history of the area in the unique environment of Stiltsville; however, the history of the structures and the Stiltsville area could be told using other interpretive means. Because the structures have not been accepted for listing on the National Register of Historic Places, it is considered by the National Park Service that the environmental benefits that would be achieved with removal of the structures outweigh the status of the structures as historical resources.

Based on the environmental analysis prepared for management of the Stiltsville structures, Alternative D is considered the environmentally preferred alternative. Although Alternative A satisfies to some degree the six requirements detailed above including preservation of structures that some deem an important component of south Florida's history, Alternative D attains the widest range of beneficial uses of the environment, natural and cultural preservation, and visitor safety and enjoyment, without degradation of resources.

## **SUMMARY OF ALTERNATIVES**

### **DEGREE TO WHICH EACH ALTERNATIVE MEETS THE PURPOSE, NEED, AND OBJECTIVES**

Table 3 summarizes the ability of each alternative to meet the objectives. None of the alternatives would result in environmental effects that would detract from the National Park Service's ability to fulfill the park's purpose "to preserve and protect for the education, inspiration, recreation, and enjoyment of present and future generations a rare combination of terrestrial, marine, and amphibious life in a tropical setting of great natural beauty." Environmental impacts would be of a negligible to minor magnitude, and the effects of activities associated with the structures could be mitigated by the use of appropriate operations, maintenance, and construction best management practices. Under the no action alternative (Alternative D), no pollutants would be associated with Stiltsville structures following removal.

Alternatives A or B would provide the best opportunity to enhance visitor enjoyment and appreciation of important park resources by increasing public use of and access to the Stiltsville structures. Under Alternative A, one or more organizations or individuals may create a non-profit organization under the regulations of the Internal Revenue Service and non-competitively enter into an appropriate arrangement with the National Park Service for the management and use of the Stiltsville structures. Under Alternative B, the National Park Service would operate and manage the structures for a range of public uses, including environmental education, scientific research, artistic pursuits, and organizational meetings and retreats. Through competitive leases Alternative C would seek to achieve a range of public uses similar to Alternatives A and B. Alternative C could continue exclusive use of the structures by a small number of leaseholders and their guests if public use leases prove unsuccessful. Alternative D would require the removal of all man-made structures from Biscayne National Park, obviously eliminating all opportunity for visitor enjoyment.

Alternative A would control access to the structures by the use of licensed, knowledgeable boat captains for commercial transit services and through monitoring and enforcement of restrictions on private boat access. Alternative B would involve commercial transportation or transportation provided by the entity operating the structure or managing the use. Alternative C would continue uncontrolled access to the structures by leaseholders and their guests. Although the leaseholders typically have adequate knowledge and skill to appropriately access the structures, their guests sometimes stray from deeper waters, with undesirable effects on marine resources. In addition, the leaseholders and their guests may operate vessels under the influence of alcohol, which may increase incidents leading to resource damage (such as from boat groundings), accidents, or fatalities. Boat traffic under Alternative D would include only general public uses of the Biscayne Channel or Safety Valve flats.

Alternatives A and B would provide onsite staff who would enhance the ability to manage and protect park resources through monitoring and research, enforcement, visitor information and education, and maintenance. Alternatives C and D would continue to base activities for the northern portion of the park out of Convoy Point, 15 miles away.

**TABLE 3: OBJECTIVES, AND THE ABILITY OF THE ALTERNATIVES TO MEET THEM**

<b>Objective</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Water Quality				
Pollutants associated with the use of the structures and watercraft emissions that enter the water are managed to comply with state and Clean Water Act antidegradation policies, goals, and regulations.	Reconstruction/rehabilitation and maintenance of the structures using “green” construction and maintenance materials and methods would reduce the introduction of pollutants into the surrounding environment. Boat traffic would still be present to bring visitors to the site. Waste removal procedures would be implemented and strictly enforced. Park or commercial-operated watercraft with 2-cycle engines would be phased out and replaced with less-polluting four-cycle or direct-injection engines.	Same as Alternative A.	Same as Alternative A.	No pollutants would be associated with Stiltsville structures following removal.  Demolition of the structures using “green” construction methods would reduce the introduction of pollutants into the surrounding environment. Removal of the structures would also eliminate sewage, trash, and hazardous wastes entering the environment. Without the presence of the structures, boating activity would decline and pollutant emissions to the water would be reduced.

**TABLE 3: OBJECTIVES, AND THE ABILITY OF THE ALTERNATIVES TO MEET THEM (CONTINUED)**

Objective	Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use	Alternative B: National Park Service Development and Management to Provide for Public Use	Alternative C: Competitive Leasing to Provide for Public and Private Use	Alternative D: No Action Alternative - Removal of the Stiltsville Structures
Aquatic organisms, including seagrasses, are protected from activities associated with the use of the structures, including sediment disturbances, to ensure the viability of the bay’s ecosystems.	Sediment disturbances and disruption to seagrass beds in the form of vessel groundings would be reduced due to the onsite presence of park staff, trained operators bringing visitors to the site, and the regulated use of the structures. Aquatic resources would be protected due to the care taken to limit or eliminate spills, leaching, and other water quality impacts.	Same as Alternative A.	Same as Alternative A.	No onsite uses would be present to cause undesirable effects. Because park staff would be located at Convoy Point, more than 15 miles from Stiltsville, limited management and enforcement presence would be available to meet general park resource management goals in the northern part of the park.
Biological Resources				
Activities associated with the use of the structures occur in a manner that minimizes effects to aquatic resources and protects birds, fish, and other organisms, including endangered or threatened species and their habitats.	Guidelines pertaining to the use of fishing line, trash and debris disposal would be developed and implemented. Limiting access to some structures to skilled boat operators would decrease the accident potential (groundings and prop scarring) to submerged habitats. The elimination of intentional wildlife feeding and increased educational/interpretive programs explaining the potential adverse affects of wildlife feeding would benefit biological resources.	Same as Alternative A, except the National Park Service would control use.	Same as Alternative A, except control of use would be by leaseholders under terms of lease with National Park Service.	No onsite activities would be present to cause undesirable effects to resources. Upon removal, natural recruitment and recovery processes would begin, resulting in seagrass beds potentially reclaiming previously disturbed areas where the structures were located and area restored to near-natural conditions.

**TABLE 3: OBJECTIVES, AND THE ABILITY OF THE ALTERNATIVES TO MEET THEM (CONTINUED)**

Objective	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
The close proximity of the structures to the resource is used to educate the public and enhance their understanding of the fragility of the marine environment in the bay.	Educational efforts provided on-site would promote the potential beneficial and negative consequences of everyday interactions with the fragile marine environment. Education would target groups that currently may have only limited opportunity to use the park.	Same as Alternative A.	Same as Alternative A to the extent that private bids would be offered and accepted by National Park Service to provide public functions under the terms of the lease.	Removal of the structures would eliminate opportunities for facility-based programs in the immediate vicinity. Without a northern base of operations, the opportunity to offer any educational programs in the northern part of the park would be very limited.
Biota are protected from adverse effects of contaminants that could be released from the structures.	New construction and repairs to the structures would be done with sustainable materials (e.g., with recycled plastic marine lumber rather than with treated lumber containing chemicals that could leach into the water from rain or sea splash). Use of paints and treatments with anti-fouling preservatives would be minimized.	Same as Alternative A.	Same as Alternative A.	Removal of the structures would remove the source of contaminants.



**TABLE 3: OBJECTIVES, AND THE ABILITY OF THE ALTERNATIVES TO MEET THEM (CONTINUED)**

Objective	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Endangered or Threatened Species				
Endangered or threatened species and essential fish habitat are protected from harmful interactions with Stiltsville visitors and watercraft.	Access to the structures by trained boat operators would increase substantially. Onsite park staff would monitor access to the structures. Appropriate measures would be taken to minimize erosion and turbidity from occurring and impacting essential fish habitat during construction activities. All construction activities would require the use of spill prevention devices (i.e., floating booms and oil absorbing materials) to reduce the impacts of unpredicted occurrences and accidents. All construction activities would be conducted under the supervision of a biologist to ensure that no direct impacts to sensitive marine resources occurred.	Same as Alternative A.	Same as Alternative A, except the presence of trained boat operators would occur only if it was required as a part of the lease agreement.	Removal of the structures would eliminate structure-related threats to endangered or threatened species.

**TABLE 3: OBJECTIVES, AND THE ABILITY OF THE ALTERNATIVES TO MEET THEM (CONTINUED)**

<b>Objective</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Cultural Resources				
Submerged cultural resources are protected. Any renovation, demolition, or construction in the Stiltsville vicinity complies with Section 106 of the National Historic Preservation Act.	Onsite presence of park staff would more readily monitor visitor activity around known submerged cultural resources. All construction and management actions associated with the structures would be done in accordance with relevant laws and regulations.	Same as Alternative A.	Same as Alternative A.	Removal of the structures would be done in accordance with relevant laws and regulations. Structure-related threats to cultural resources would no longer be present.
Visitor Experience and Visitor Safety				
A high-quality, safe, educational, balanced, diverse, and accessible (both general access and handicap) public visitor experience is provided at Stiltsville.	The alternative would provide an interpretative center, educational facilities, research facilities, and other amenities that would be available to the general public with limitations only for the benefit of the environment.	Same as Alternative A.	Same as Alternative A, except that public visitor experiences would be offered to the extent that private bids offered to and accepted by National Park Service would provide for public uses under terms of the lease.	Removal of the structures would eliminate opportunities for facility-based visitor experiences in the immediate vicinity. Without a northern base of operations, the opportunity to offer park programs in the northern part of the park would be very limited.

**TABLE 3: OBJECTIVES, AND THE ABILITY OF THE ALTERNATIVES TO MEET THEM (CONTINUED)**

Objective	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Information is effectively conveyed to the public about the area's history, natural resources, and cultural resources, including those in the immediate Stiltsville vicinity and at nearby locations such as Soldier Key and Key Biscayne.	Visitors to Stiltsville would receive information and participate in programs provided at an onsite interpretive center or through educational and scientific functions provided by other organizations on one of the other structures.	Same as Alternative A.	Same as Alternative A, except that public information that provide for public uses under terms of the lease would be offered to the extent that private bids would be offered and accepted by National Park Service.	Removal of the structures would eliminate opportunities for facility-based public information in the immediate vicinity. Without a northern base of operations, the opportunity to offer park programs in the northern part of the park would be very limited.
Sound Environment/Noise				
Human-caused intrusions on the natural soundscape are minimized.	Improvements in the natural soundscape may occur due to the use of public transportation to access the structures and net reduction in the number of boats navigating throughout the area. The effects from the routine operations and construction activities would be managed to lessen intrusions on the soundscape.	Same as Alternative A.	Same as Alternative A.	Removal of the structures would eliminate structure-related intrusions on the natural soundscape.

**TABLE 3: OBJECTIVES, AND THE ABILITY OF THE ALTERNATIVES TO MEET THEM (CONTINUED)**

<b>Objective</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
The structures' location close to the environment is used to teach the public about the importance of preserving the natural soundscape.	One or more structures would be dedicated to educational efforts that would emphasize the unique and endemic characteristics of Biscayne National Park and interpret concepts of natural soundscapes in national park settings and the effects of Miami's urban environment in Biscayne National Park.	Same as Alternative A.	Same as Alternative A, except that public information and education would be offered to the extent that private bids that provide for public uses under terms of the lease would be offered and accepted by National Park Service.	Removal of the structures would eliminate opportunities for facility-based public information and education in the immediate vicinity. Without a northern base of operations, the opportunity to offer park programs in the northern part of the park would be very limited.
Visual Resources				
The unique visual character of Stiltsville is maintained.	Improvements would be designed to maintain the character of the structures without changing the original vernacular style and scale of the structures.	Same as Alternative A.	Same as Alternative A.	The structures would no longer be present and their visual character would be lost.
The natural seascape viewshed is restored when the structures can no longer be sustained without rebuilding under the guidelines established in this plan (the Criteria Used to Determine whether a Damaged Structure Should Be Removed or Repaired in Appendix B).	The Criteria Used to Determine whether a Damaged Structure Should Be Removed or Repaired figure would be used to determine when a structure was no longer suitable for use and should be removed.	Same as Alternative A.	Same as Alternative A.	The natural seascape would be fully restored.

**TABLE 3: OBJECTIVES, AND THE ABILITY OF THE ALTERNATIVES TO MEET THEM (CONTINUED)**

<b>Objective</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Park Operations				
A base for park operations is provided in the northern portion of the park.	A base for park operations would be provided either within one of the structures or at a yet-to-be-determined landside location.	One of the structures would be used to support park administration functions for Stiltsville and the northern portion of the park including resource management and visitor protection, interpretation, and maintenance.	Same as Alternative A.	There would be no base for park operations at Stiltsville.
Structural integrity improvements and regular preventative maintenance minimize the need for cleanup following major storms.	Rehabilitation of the structures and the implementation of regular maintenance would improve the ability of the structures to withstand storms.	Same as Alternative A.	Same as Alternative A.	The structures would be removed.

**TABLE 3: OBJECTIVES, AND THE ABILITY OF THE ALTERNATIVES TO MEET THEM (CONTINUED)**

Objective	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Socioeconomics				
The park works cooperatively with concessioners, local businesses, or organizations to provide services and visitor opportunities.	Stiltsville structures would be managed to provide a mix of public uses operated by non-National Park Service entities. These would include transportation services to the site, services at local marinas that stage trips to the site, and scientific, educational, civic, and business organizations that would have access to the structures.	Same as Alternative A.	Same as Alternative A.	The structures would not be present and services would not be provided.

## **IMPORTANT FEATURES OF EACH ALTERNATIVE**

Table 4 summarizes the key features of the alternatives. Alternatives A and B provide for a mix of public uses, serving between 17,910 and 24,800 different individuals with 4,580 to 8,064 boat trips per year. Alternative C provides for largely private social uses, serving between 10,038 and 15,470 visitors with 2,576 to 4,592 boat trips per year. Eliminating the structures under Alternative D would eliminate all associated public use. Alternatives A and B would provide the National Park Service with a base for park operations in the northern portion of the park, while Alternatives C and D would not.

## **IMPACTS OF EACH ALTERNATIVE**

Table 5 provides a summary of the impacts of each alternative retained for analysis. More detailed information on the effects of the alternatives is provided in the “Environmental Analysis” section.

**TABLE 4: SUMMARY OF IMPORTANT FEATURES OF THE ALTERNATIVES**

<b>Feature</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Management purpose	Broad public use for education, interpretation, research, and inspiration	Broad public use for education, interpretation, research, and inspiration	Private uses plus broad public use for education, interpretation, research, and inspiration	Site restoration
Managing entity	Stiltsville Non-profit Organization	National Park Service	Private leaseholders under terms of lease with National Park Service	National Park Service
Total visitor days annually <sup>a/</sup>	17,910-24,800	17,910-24,800	10,038-15,470	0
Annual boat trips to Stiltsville	4,580-8,064	4,580-8,064	2,576-4,242	0
Costs to the National Park Service				
Construction (per structure)	Costs borne by Stiltsville Non-profit Organization	Approx. \$200,000 -\$500,000 <sup>b/</sup>	Approx. \$200,000 -\$500,000 <sup>b/</sup>	N/A
Demolition (per structure)	N/A	N/A	N/A	Approx. \$100,000 - \$150,000
Source of offsetting income	Revenue through donations, user fees, or operating agreements	Commercial service contracts, potentially, and user fees	Operating agreements with leaseholders, potentially	None needed
Provides a base for park operations in the northern portion of the park	Yes	Yes	Yes	No

a/ Visitor days include only use associated with the structures and do not include general public uses of the Biscayne Channel or Safety Valve flats.

b/ The cost to renovate each structure would depend on the intended use of the structure. See description of Alternative A for a discussion of renovation costs.



**TABLE 5: SUMMARY OF IMPACTS OF THE ALTERNATIVES**

<b>Impact Topic</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Water Quality	The continued use of structures would result in a negligible to minor adverse impact to the water quality in the surrounding area. Long-term, indirect beneficial impacts would result from educational, social, and research programs that would be initiated under this alternative. Activities associated with Alternative A would contribute negligibly to the cumulative adverse effects on water quality resulting from increased urbanization and recreation in south Florida.	Same as Alternative A.	Same as Alternative A.	Demolition of structures would result in localized, short-term, negligible to minor adverse affects on water quality. A reduction of watercraft traffic in the area would represent a negligible to minor, long-term benefit to water quality. Minor to moderate long-term benefits would also accrue from the elimination of spills, sewage, or hazardous materials entering the water associated with use of the structures. There would be long-term, indirect, adverse impacts resulting from a lack of educational, social, and research programs with implementation of the No Action Alternative. The cumulative effects of this alternative would be beneficial and negligible.

**TABLE 5: SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)**

<b>Impact Topic</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Biological Resources	Use of the structures and watercraft in the area would result in adverse, long-term, localized and negligible to moderate effects to biological resources. Construction noise may displace wildlife or disrupt behavior that would be considered a localized, temporary and negligible to minor adverse effect. Adverse cumulative effects from implementation of Alternative A on biological resources would be negligible.	Same as Alternative A.	Same as Alternative A.	Long-term, negligible to moderate, beneficial effects would accrue with the removal of structures from improved water quality and seagrass habitat. Demolition activity would result in negligible to minor, localized and temporary adverse effects by disturbing and/or displacing wildlife and habitat. The beneficial effects of this action negligibly supports the actions implemented by other agencies to restore and protect Biscayne Bay.

**TABLE 5: SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)**

<b>Impact Topic</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Endangered or Threatened Species	Use of structures and watercraft access would cause undesirable effects on critical habitat in the Stiltsville area. With increased National Park Service presence in the area to enforce watercraft regulations, the short- and long-term adverse effects on endangered and threatened species would be negligible. Educating the public about the consequences of their activities on protected wildlife and their habitat would reduce impacts in the future. The implementation of Alternative A would have long-term negligible cumulative adverse impacts on endangered and threatened species, and their habitats.	Same as Alternative A.	Same as Alternative A.	The long and short-term effects of the no action alternative on endangered or threatened species would be localized and negligible. The beneficial impacts on endangered and threatened species would include preservation and enhancement of their habitat. The cumulative effects of this plan and others to improve water quality and clarity in Biscayne Bay would result in minor beneficial effects on federal- and state-listed species.

**TABLE 5: SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)**

<b>Impact Topic</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Ecologically Critical Areas	Construction activity would result in indirect negligible to minor short-term impacts to ecologically critical habitats. Use of boats to access structures would continue to cause undesirable effects on seagrass beds and substrates representing a localized, long-term and minor to moderate adverse effect to this essential fish habitat. Long-term, adverse effects on ecologically critical areas from discarding of wastes into the environment would be minor. Educating the public about the consequences of their activities on fragile estuarine ecosystems would probably reduce adverse effects to them in the future. Negligible cumulative effects would occur with this alternative.	Same as Alternative A.	Same as Alternative A.	Localized effects to the ecologically critical areas during structure removal activities would be negligible to minor and short-term. The localized long-term beneficial effects of Alternative D on essential fish habitat in the area would be minor to moderate with a reduction in boating activity. The cumulative effects of this plan and others improve water quality and clarity would result in a minor to moderate beneficial effect on ecologically critical areas in the bay.

**TABLE 5: SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)**

<b>Impact Topic</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Cultural Resources	Negligible long-term adverse impacts on submerged cultural resources from construction activity. Negligible to minor localized long-term adverse effects to cultural resources would result from the continued use and access to the structures compared to the no action alternative. The cumulative effects to cultural resources would be adverse and negligible to minor.	Same as Alternative A.	Same as Alternative A.	The removal of the structures would result in the loss of an opportunity to present the history of the area in the unique environment of Stiltsville. The demolition activities would result in long-term negligible to minor adverse impacts to submerged cultural resources. Reduced visitor use of the area after structure removal would result in long-term negligible to minor benefits to submerged cultural resources in the area. The cumulative effects to cultural resources would be adverse and negligible to minor.

**TABLE 5: SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)**

<b>Impact Topic</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Visitor Use and Experience and Visitor Safety	Long-term, minor to moderate, beneficial effects by providing for a broad range of public uses and opportunities for continued public enjoyment of Stiltsville. Increased presence of park staff would provide enhanced public awareness of Biscayne National Park and long-term, minor to moderate benefits. Long-term, minor to moderate, beneficial effects on visitor health and safety would result from increased staff, additional controls on boating practices, and physical structural and safety improvements to the structures. Moderate to major, cumulative effect.	Same as Alternative A.	Long-term, minor to moderate, beneficial effects to the extent that leases provide for a broad range of public uses and opportunities for continued public enjoyment. Increased presence of park staff would enhance public awareness of Biscayne National Park, with long-term minor to moderate benefits. Long-term minor to moderate, beneficial effects on visitor health and safety would result from increased staff, additional controls on boating practices, and physical structural and safety improvements to the buildings. Moderate to major, cumulative effect.	Minor to moderate beneficial effects for visitors seeking quiet passive experiences in the Stiltsville area. The removal of the structures would add negligibly to the amount of open water available for visitor use. Improvements to the natural seascape would offer minor to moderate, beneficial effects for those who appreciate natural settings. For those who have used or have been associated with the structures, long-term, adverse effects to their experiences relative to Stiltsville would be moderate to major. Minor, adverse effects would result from the elimination of opportunities for environmental education and opportunities. Beneficial effects on visitor safety would be negligible to minor. Cumulative effects on visitor experience and safety would be negligible to minor.

**TABLE 5: SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)**

<b>Impact Topic</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Soundscape	Noise generated from renovation/construction activities and routine maintenance of the structures would have a direct, localized, short-term, minor to moderate adverse effect on the natural soundscape. The noise level generated by public and/or private boating access and use of the structures would have a direct but localized, long-term, minor to moderate adverse effect on the natural soundscape. There would be a negligible, adverse cumulative effect on soundscape.	Same as Alternative A.	Same as Alternative A.	Implementation of Alternative D would have direct, short-term, minor to moderate adverse effects on soundscape in a localized area during demolition activities. After removal of the structures there would be a direct, long-term, minor to moderate, beneficial effect in this localized area because noise associated with boating access and use of the structures would be eliminated. Removal of the structures would have a negligible to minor beneficial cumulative effect on the natural soundscape.

**TABLE 5: SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)**

<b>Impact Topic</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Visual Resources	In the short-term, the renovation of these structures would have direct, negligible to minor adverse effects on the visual resources because of the construction activities. In the long-term, the retention and use of these structures would have a direct and localized, negligible, adverse or beneficial effect, depending on the perception and values of the individual viewing the scene. In the context of the urban/coastal environment that surrounds the bay, the structures would have a negligible or minor adverse cumulative effect on visual resources.	Same as Alternative A.	Same as Alternative A.	In the short-term, the removal of these structures would have direct, negligible to minor adverse effects on the visual resources because of demolition activities. In the long-term, the removal of the structures would have a direct and localized, negligible to minor beneficial or adverse effect, depending on the perception and values of the individual viewing the scene. The cumulative adverse effects of this alternative would be generally considered negligible or minor.



**TABLE 5: SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)**

Impact Topic	Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use	Alternative B: National Park Service Development and Management to Provide for Public Use	Alternative C: Competitive Leasing to Provide for Public and Private Use	Alternative D: No Action Alternative - Removal of the Stiltsville Structures
Park Operations	Alternative A would have a direct, long-term, negligible to minor adverse effect on the financial and staffing component of park operations because of the development, operation, maintenance, and staffing costs associated with the possible rehabilitation and use of a structure as a satellite park ranger office/interpretive contact facility. However, if law enforcement were improved under Alternative A, improved visitor/resource protection, public health and safety functions and decreased response time to this northern portion of the park would provide a direct, minor beneficial effect because of the increased long-term National Park Service presence.	Alternative B would have a direct, long-term, moderate adverse effect on National Park Service operations by substantially increasing both the financial and staffing burden on National Park Service operations. This alternative would maximize the National Park Service presence in this heavily used northern portion of the park and would have a direct, long-term moderate beneficial effect, allowing reduced response time for emergencies, improved monitoring for better resource protection needs, and the expansion of law enforcement, visitor protection, and public health and safety functions.	Alternative C would have a direct, long-term minor adverse effect on park operations due to the capital development costs associated with rehabilitation of stilt structures used for National Park Service purposes, increased costs of additional National Park Service staff necessary to monitor users and manage the competitive lease program. However, if law enforcement were improved under Alternative C, improved visitor/resource protection, public health and safety functions and decreased response time to this northern portion of the park would provide a direct, minor beneficial effect because of the increased long-term National Park Service presence.	Removal of the Stiltsville structures would have a direct, long-term moderate beneficial effect on the financial component of National Park Service park operations because this action would eliminate any future need to expend National Park Service funds to renovate or preserve these structures. Likewise, this action would eliminate the need to provide additional staffing to manage any future use that might be considered for these structures. However, there might be a potential direct, short and long-term, moderate adverse effect on law enforcement, visitor/resource protection, and public health and safety park operation functions in this northern portion of the park, if National Park Service were to ignore the need for an increased presence due to the removal of these structures.

**TABLE 5: SUMMARY OF IMPACTS OF THE ALTERNATIVES (CONTINUED)**

<b>Impact Topic</b>	<b>Alternative A: Proposed Action – Non-profit (IRS 501 (c) (3)) Organization Development and Management to Provide for Public Use</b>	<b>Alternative B: National Park Service Development and Management to Provide for Public Use</b>	<b>Alternative C: Competitive Leasing to Provide for Public and Private Use</b>	<b>Alternative D: No Action Alternative - Removal of the Stiltsville Structures</b>
Socioeconomics	Implementing Alternative A would have long-term negligible to minor beneficial effects to the local economy. There would be no adverse or beneficial effects to concessions within the park. The mix of public uses proposed under Alternative A would provide long-term minor socioeconomic benefits by increasing the opportunities for the public, including the economically disadvantaged, to access the structure and gain an appreciation of park resources.	Same as Alternative A.	Alternative C would have long-term, negligible to minor beneficial effects on the local economy. There would be no adverse or beneficial effects to concessions within the park. Alternative C would also provide long-term, negligible socioeconomic benefits from increased opportunities for the public, including the economically disadvantaged, to access the structures.	Removal of the structures would have short-term negligible to minor beneficial effect on local business related to construction activity. Removal of the structures would eliminate the opportunity for public use and educational opportunities to increase public awareness of the history and ecology of the area. This would result in long-term minor adverse socioeconomic effects.

## **AFFECTED ENVIRONMENT**

### **WATER QUALITY**

Stiltsville lies on the eastern edge of the central region of Biscayne Bay, a shallow, subtropical estuary along the southeastern coast of Florida. Biscayne Bay is approximately 428 square miles in area, with a contributing watershed of approximately 938 square miles.

The Biscayne Bay watershed is highly urbanized and includes 16 percent of the state's population in an area that represents less than 2 percent of the land available in the state. South Florida is one of the rapidly growing areas of the country and this is occurring despite the fact that more than a third of the contributing watershed is considered protected wetlands. Land uses and the contaminants they contribute within the area covered by the Biscayne Bay Surface Water Improvement and Management Plan include the following (Mulliken and VanArman 1995):

Urban land occupies 54 percent of the watershed, and includes residential, commercial, industrial, institutional, and transportation uses.

More than 70 percent of this area (38 percent of the total watershed) is used for residential and commercial purposes. Runoff from these land uses contains pesticides, cleaning solutions, solvents, and automotive products.

About 7 percent of the urban area (3.6 percent of the total watershed) supports industrial land uses, landfills, roads, and airports. Industrial and landfill areas contribute metals, organic chemicals, and products from manufacturing. Stormwater runoff from roads is a major source of suspended solids, lead, zinc, gasoline byproducts, and polyaromatic hydrocarbons. Airfields contribute fuels, solvents, oil and grease, metals, nutrients, and pesticides.

Open space represents about 20 percent of urban lands. Runoff from open space typically has low levels of pollutants but can contain fertilizers and pesticides from managed areas such as parks and golf courses. Runoff may also have high levels of sediment from erosion.

Protected wetlands constitute 35 percent of the Surface Water Improvement and Management Plan area.

About 11 percent of the Surface Water Improvement and Management Plan area consists of agricultural lands, rangelands, forests, and barrens. Runoff from agricultural land is an important source of fertilizers and pesticides, as well as sedimentation.

The bay receives fresh water from rainfall, surface water runoff, a series of drainage canals, and ground water seepage. The central region of the bay receives freshwater flows from the Miami River, Tamiami Canal, Comfort Canal, Coral Gables Canal, and the Snapper Creek Canal. Surface water discharges also occur through the G-93 and S-22 structures. The central section of the bay is an area of generally higher salinity that is controlled by flow over the Safety Valve shoals (Mulliken and VanArman 1995).

Water quality degradation affects the ecological communities in and around the bay as well as the health and well being of the local human population. Water quality within Biscayne Bay has been described as ranging from bad to near pristine (Mulliken and VanArman 1995). Most water quality problems in the bay are located in the northern region and are associated with the city of Miami. Surface water runoff from urban land uses has been identified as the major source of contaminants in the bay.

Biscayne Bay has been designated by the state legislature as an Outstanding Florida Water. This state-enforced rule applies to permitted projects and is intended to prevent further water quality degradation. In 1988, Biscayne Bay was identified as a priority water body and therefore eligible for a significant amount of investment for research and restoration projects under the Surface Water Improvement and Management Plan. It is believed that the recent improvements in the water quality in the bay are a result of numerous plan-funded projects that improve the surface water discharges into the bay (Mulliken and VanArman 1995).

The park has conducted water quality monitoring on a regular basis beginning in the mid to late 1980s. Effective in 1991, a total of 12 water quality monitoring stations (7 bay and 5 reef platforms) were established and maintained. Instruments monitor conductivity, temperature, dissolved oxygen, pH and turbidity (reef sites only). The water monitoring program objectives for the park are to: (1) supply information that is useful in the understanding of the cycling of water diurnally, seasonally and annually, and (2) studying the impacts of human influence on such systems so as to be able to better preserve and protect park water clarity, quantity and quality.

Water quality monitoring has been conducted in Biscayne Bay since 1979 by Miami-Dade County Department of Environmental Resources Management, with funding assistance from the south Florida Water Management District. Data are collected from about 100 sampling stations. Monitoring includes physical and meteorological observations, including such features as water depth, water temperature, and air temperature, plus analysis for 22 water quality parameters. Water quality monitoring results are available on the Internet on the U.S. Environmental Protection Agency's STORET site ([http://oaspub.epa.gov/storpubl/station\\_selection](http://oaspub.epa.gov/storpubl/station_selection)).

The Surface Water Improvement and Management Plan update (Mulliken and VanArman 1995) reviews the water quality results throughout Biscayne Bay from this sampling. For the 13-year period (1979 through 1992), the report states:

The results of the trend analysis are interesting, and encouraging. Of 150 statistically significant trends in the data, 78 percent show improvement in water quality. The parameters that showed the most stations with improvement were turbidity, dissolved oxygen, and total coliform bacteria, which are critical factors in ecosystem health and public health. These findings must be interpreted cautiously, but they suggest that efforts to clean up the bay are paying off.

Ten of the Department of Environmental Resources Management water quality monitoring stations monitor water quality around Stiltsville. Data from these sites indicate that water quality in this area has not changed substantially over the last two decades (Blair 2001).

The Stiltsville structures are located on the shoals known as the Safety Valve (see the Location map). Shallow channels through the shoals convey both tidal flows and storm surges. Tides

continually flush the shoals around Stiltsville, and for the most part the water quality is considered very good (Mulliken and VanArman 1995).

The materials used to construct and rehabilitate the Stiltsville structures must be protected from the elements. Typically, this has involved the regular use of marine paint, wood preservatives, and anti-fouling agents. These products usually contain tributyltin and other toxic substances that diffuse into the water and are mildly toxic to birds but highly toxic to aquatic organisms (EXTOXNET 1996). Tributyltin, at very low levels, can cause structural changes, growth retardation, and death in clams, mussels, and oysters at levels between 0.06 and 2.3 µg/L. Tributyltin can cause growth cessation of lobster larvae at concentrations as low as 1.0 µg/L. Tributyltin does not readily dissolve, but binds to the sediments or to particulates in the water column where it may take 1 to 34 weeks to degrade (EXTOXNET 1996).

Boaters access the structures via narrow, shallow, and sometimes, winding channels. When boaters lack adequate navigation skills, are unfamiliar with the access route, or travel at excessive speeds, the boat propellers and hulls can contact the bay bottom. The resulting bottom disturbances can increase water turbidity until currents or settling remove silts from the water column. This activity also re-suspends pollutants that have bonded with the sediments, making them available to aquatic organisms.

The water quality of Biscayne Channel, which accommodates sea-going traffic, is affected by substances accidentally or deliberately released from vessels. These include, but are not limited to, fuels, oil and grease, solvents and cleaners, trash, wash and rinse waters, and both treated and untreated sewage. In addition, the wake from the watercraft stirs up the sediments and increases turbidity. Most of the water quality impacts remain in the channel and only affect the edge of the shoals.

## BIOLOGICAL RESOURCES

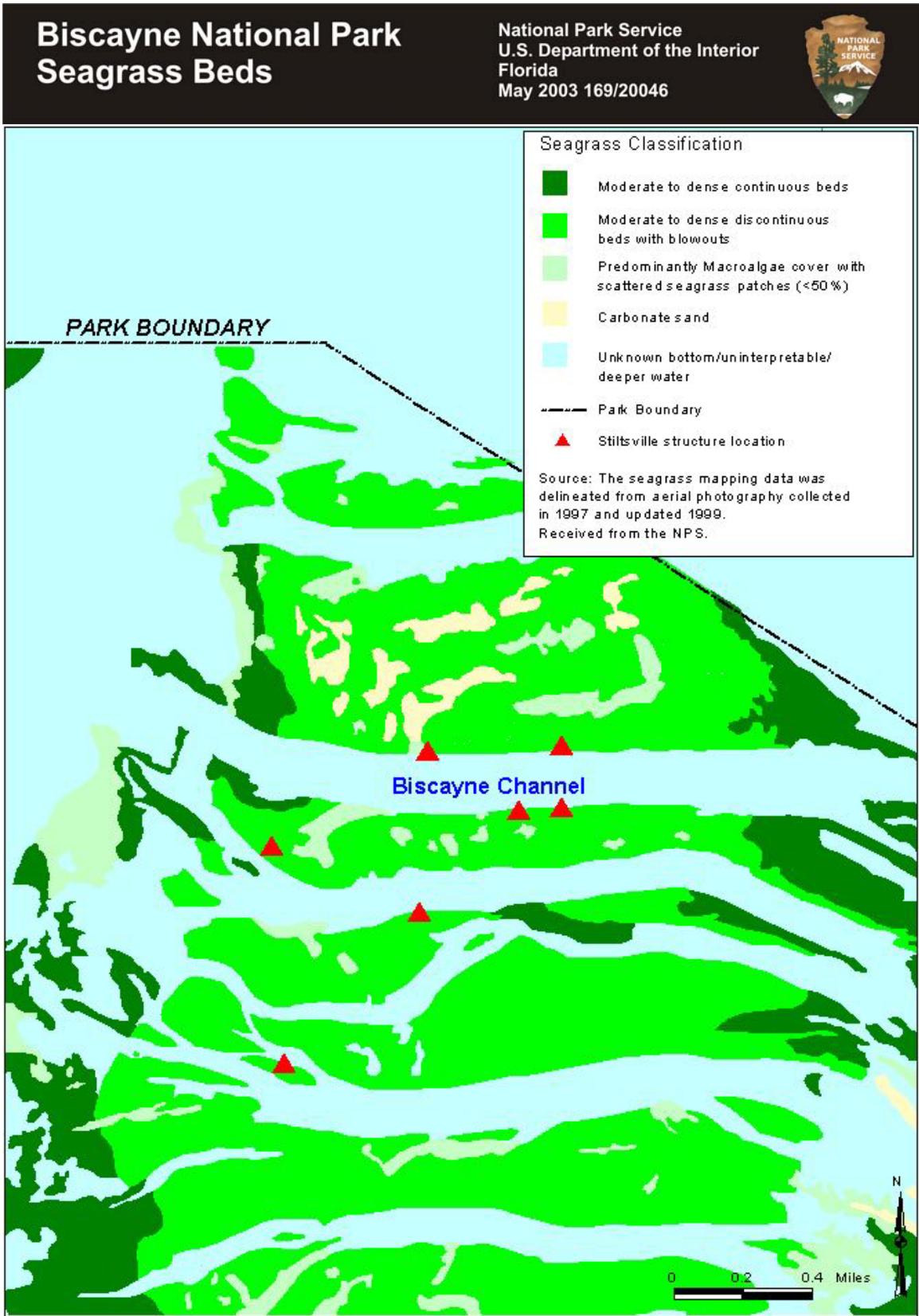
The submerged habitats of Biscayne Bay are composed of open-water communities, such as plankton and fishes, and bottom communities, including hard bottom, seagrasses, seagrass-algae, and barren bottom communities with their associated fauna (Mulliken and VanArman 1995). Seagrass areas are of particular importance to many species of fish because mature fish spawn at the seaward edge of bank reefs or in the offshore pelagic regions. The resultant larvae are transported coastward and the larvae and juveniles then inhabit the coastal lagoons and seagrass beds of the barrier islands and near-shore mangrove areas that also serve as a nursery and rearing habitat for juvenile fish (Ault 2001). Seagrass habitat is especially prevalent in Biscayne Bay and the corresponding fauna is well developed, including bonefish (*Albula vulpes*), ladyfish (*Elops saurus*), pompano (*Trachinotus carolinus*), permit (*Trachinotus falcatus*), red drum (*Sciaenops ocellatus*), spotted sea trout (*Cynoscion nebulosus*), silver perch (*Bairdiella chrysoura*), and hogfish (*Lachnolaimus maximus*). Some species may spend the majority of their lives offshore; however, their juvenile life stages are in Biscayne Bay or similar habitats. Seagrass beds also serve as a food source for the endangered West Indian manatee (*Trichechus manatus latirostris*) and as nursery grounds for several species of fish and invertebrates.

### SEAGRASS BEDS

Seagrass beds or meadows have been described in current literature as among the most productive ecosystems in the world (Thayer, *et al.* 1997), due to their importance in the life cycles of most aquatic organisms. Seagrasses support complex food webs by virtue of their physical structure and primary productivity. The seagrass meadows provide shelter from predators, breeding and nursery areas for many commercial and recreational fish, and forage areas for many species, including many listed as endangered. The plants absorb nutrients from coastal and estuarine systems, stabilize substrates, and minimize the effects of wave action (Short *et al.* 1995).

The seagrasses in Biscayne Bay cover approximately 72,000 acres, approximately 42 percent of the total park area (Battle 1997). The Seagrass Beds map provides an aerial view of the coverage of the seagrass beds within the vicinity of Stiltsville. Historically, the extent of seagrass cover was reduced by anthropogenic impacts, especially in the northern regions of the bay. Large dredge and fill projects, some commercial fishing methods, watercraft propeller scarring and groundings, and other direct physical impacts have had the greatest impact on the loss of seagrass. Indirect impacts such as water quality degradation, increased turbidity, changes in salinity, and cultural eutrophication have also caused seagrasses to decline. Regulations requiring the treatment of point and non-point source discharges have resulted in significant improvements to water quality and clarity, reducing these effects as the primary impacts on seagrass. With the increasing population in south Florida and the increasing popularity of pleasure boats, the primary direct impacts to seagrasses now are those caused by watercraft groundings and scarring by watercraft propellers (Sargent *et al.* 1995). Indirect adverse effects occur from localized turbidity and sedimentation that result from bottom disturbances by boats (Canzanelli 2001).

Propeller scarring takes place when boats traverse water too shallow for the drafts of the boats. The Seagrass Beds map depicts the seagrass scarring within the bay. The propellers cut and pull at the grasses and the sediments, leaving unvegetated furrows. These scars tend to widen over time due to erosion of the unprotected sediments by wave action.







Repeated scarring can ultimately lead to completely denuded substrates and the subsequent loss of habitat and degradation of water quality. Propeller scars are especially damaging in areas like the Safety Valve shoals where the strong currents regularly disturb open sediments, causing a scouring effect that prevents recolonizing of even pioneer species (Smith 1993).

Groundings are even more severe impacts to seagrass beds. In these cases, a boater runs aground in the shallow water and tries to get free by force. The engines of large boats can leave blowouts in the substrate and suspend enough sediment to create water quality impacts in areas substantially outside the perimeter of the physical impacts. These areas are slow or impossible to recolonize, and restoration efforts have met with mixed results.

Research has shown that each species of seagrass has physiological and structural differences that affect its growth and tolerance for stress, and therefore each species has a different ability to recover from scarring. Some seagrasses are characterized by weakly differentiated rhizomes for vertical growth and are more vulnerable to becoming buried by mobile sediments. However, these species have the ability to spread more quickly because of their shallow rhizome system and a greater ability for lateral branching. Shoal grass (*Halodule wrightii*) is characterized as this type of seagrass. Turtle grass (*Thalassia testudinum*) has a deeper rhizome and grows faster vertically. It therefore can withstand some sedimentation, but spreads slowly (Sargent *et al.* 1995).

Recovery of seagrass beds depends on many factors. Variables such as sediment condition, water quality, scar depth, water depth, bottom profile, current, and wave energy can significantly affect the speed of recovery. Several studies have determined that moderately scarred beds of turtle grass may take between three and five years to recover, or longer if the impacts are repeated (Sargent *et al.* 1995). In Biscayne National Park approximately 200 recorded vessel groundings occur each year. Additional vessel groundings are known to occur as detected by scarification to seagrass and coral communities, but are not reported, so consequently go unrecorded as there is no responsible party to identify. Many of the unrecorded vessel groundings occur within the Stiltsville area.

The seagrass meadows surrounding the shoals of Stiltsville are predominantly vegetated with turtle grass, the less abundant but equally important manatee grass (*Syringodium filiforme*), and shoal grass. The seagrasses appear as monocultures, mixtures of the three grass species, or associated with algae (Mulliken and VanArman 1995). The fragile seagrass communities are widely recognized for their importance to marine and estuarine ecosystems and are monitored worldwide as water quality indicators (Myers and Ewel 1990). The seagrasses in Biscayne Bay were monitored by the Florida Marine Research Institute as part of a statewide program to assess the scarring (Sargent *et al.* 1995). This information was updated in 1999 and is the source of the Seagrass Beds map showing the distribution of seagrass communities occurring within Biscayne National Park.

## AQUAFAUNA

*Plankton:* Plankton consists of free-floating plant (phytoplankton) or animal (zooplankton) organisms that drift in the water column. These organisms play significant roles in the food web of Biscayne Bay (Mulliken and VanArman 1995). The dominant phytoplankton class in Biscayne Bay is coccoid cells (Mulliken and VanArman 1995), which depend on phosphorus as their

primary nutrient for individual growth. Zooplankton consists of organisms ranging from microscopic protozoans to jellyfish, including larval and early stages of invertebrates and fish.

*Invertebrates:* Biscayne Bay is host to over 800 invertebrate species (Mulliken and VanArman 1995). The most recognized groups include shellfish such as shrimp, crabs, and lobsters. Members of these groups include the blue crab family (Portunidae, species of *Portunus* and *Callinectes*), spiny lobster (*Panulirus argus*), and shrimp (*Penaeus* spp.). Other invertebrate classes found in Biscayne Bay include annelid worms (Polychaeta), crustaceans (Crustacea), chitons (Amphineura), snails and slugs (Gastropoda), mussels, scallops, and oysters (Pteriomorpha), and echinoderms (Echinoidea, Holothuroidea, and Ophiuroidea).

During the early and mid-1900s, Biscayne Bay had a thriving commercial sponge industry. In 1991, in an effort to protect the sponge populations, the bay was officially closed to sponge harvesting, and it has never been reopened.

*Fish:* The waters of the Biscayne National Park serve as a nursery area for larvae and juveniles of a wide variety of fish (Ault 2001). Many species of these early development stage fish live and reproduce in the adjacent barrier coral reef and other offshore habitats as adults.

Biscayne Bay is a transition area for the fishes of eastern Florida, with a population of tropical and temperate water fishes (Mulliken and VanArman 1995). Examples of fish species identified in the Biscayne National Park include, but are not limited to: barracuda (*Sphyraena barracuda*), hogfish (*Lachnolaimus maximus*), gray snapper (*Lutjanus griseus*), goliath grouper (*Epinephelus itajara*), tarpon (*Megalops atlanticus*), snook (*Centropomus* spp.), as well as many members of fish families such as snappers (Lutjanidae), groupers (Serranidae), grunts (Haemulidae), spadefish (Ephippidae), surgeonfish (Acanthuridae), triggerfish (Balistidae), parrotfish (*Scaridae*), and jacks (Carangidae) (Ault 2001). Studies have identified at least 512 fish species in Biscayne Bay (Mulliken and VanArman 1995).

*Marine Mammals:* The West Indian manatee, also known as the Florida manatee, and the bottlenose dolphin (*Tursiops truncatus*) commonly forage in the Biscayne Bay. The West Indian manatee, a federally listed endangered species, is addressed in detail in the “Endangered or Threatened Species” section. The bottlenose dolphin is common in the inshore waters throughout the state of Florida. In the Biscayne National Park, bottlenose dolphins commonly forage in open waters, feeding on various fish species (i.e., mullet (*Mugil* spp.)). While overall species recovery has been promoted by federal protection, dolphins have not recovered to their original numbers in Biscayne Bay (Metro-Dade County Planning Department 1986). Additionally, the western Atlantic bottlenose dolphin population incurred massive population declines resulting from a large die-off in 1987-88 (Mulliken and VanArman 1995, NOAA – Office of Protected Resources).

*Reptiles:* Various sea turtles may be found in the Stiltsville area. These species include the Atlantic green turtle (*Chelonia mydas mydas*), the Atlantic hawksbill turtle (*Erectmochelys imbricata*), the leatherback turtle (*Dermochelys coriacea*), the Atlantic ridley turtle (*Lepidochelys kempî*), and the loggerhead turtle (*Caretta caretta*). Sea turtles are protected, and detailed descriptions are located in the “Endangered or Threatened Species” section of this document.

## AVIFAUNA

The birds of Biscayne National Park are among the most noticeable of Biscayne Bay's wildlife (Mulliken and VanArman 1995). Biscayne National Park is home to numerous permanent resident species, migratory species, and various species that are winter or summer residents. Avifaunal species found in the Stiltsville region of Biscayne National Park primarily use the bay and the stilt-structures for foraging, resting, and roosting. The existing stilt-structures do not provide optimal nesting habitat.

Bird species found in the Stiltsville region of Biscayne National Park include, but are not limited to: double-crested cormorants (*Phalacrocorax auritus*), mergansers (*Mergus* spp.), various diving ducks (subfamily Aythyinae), American white pelicans (*Pelicanus erythrorhynchos*), brown pelicans (*Pelicanus occidentalis*), ospreys (*Pandion haliaetus*), terns (subfamily Sterninae), belted kingfishers (*Ceryle alcyon*), black skimmers (*Rynchops nigra*), bald eagles (*Haliaeetus leucocephalus*), magnificent frigatebirds (*Fregata magnificens*), gulls (*Larus* spp.), herons (family Ardeidae), roseate spoonbills (*Ajaia ajaja*), white ibis (*Eudocimus albus*), glossy ibis (*Plegadis falcinellus*), oystercatchers (*Haematopus palliatus*), grackles (*Quiscalus* spp.), rails (*Rallus* sp. and *Coturnicops* sp.), hawks (*Buteo* spp. and *Accipiter* spp.), and falcons (*Falco* spp.).

## ARTIFICIAL HABITAT COMMUNITIES

*Coral, Sponge, and Algal Communities:* The Stiltsville structures themselves serve as an artificial habitat area for various sessile organisms (sponges, algae, and hard and soft coral). The concrete and wooden support pilings associated with the stilt-structures and the bare mudflats created under the structures provide substrate for various algae, sponge, and coral species not normally associated with a seagrass community (Curry, Science Coordinator, pers. com).

Algal, sponge, and coral species observed on the support pilings, under the structures themselves, and on mudflat footprints of former structures include green algae (*Penicillus* sp. and *Halimeda* sp.), massive star coral (*Siderastrea siderea*), lesser star coral (*Siderastrea radians*), encrusting fire coral (*Millepora alcicornis*), elliptical star coral (*Dichocoenia stokesii*), golf ball coral (*Favia fragum*), mustard hill coral (*Porites astreoides*), finger coral (*Porites porites*), diffuse ivory bush coral (*Oculina diffusa*), hidden cup coral (*Phyllangia americana*), symmetrical brain coral (*Diploria strigosa*), ten ray star coral (*Madracis decactis*), and boulder brain coral (*Colpophyllia natans*) (Patterson 2000).

## ENDANGERED OR THREATENED SPECIES

The seagrass meadows around Stiltsville are important to the life history of numerous species considered endangered, threatened or of special concern. These species include the Atlantic green turtle, the Atlantic hawksbill turtle, the leatherback turtle, the Atlantic ridley turtle, the loggerhead turtle, and the West Indian manatee. Avian species that may forage around the structures or use the structures as roosting or perching areas include the brown pelican, bald eagle, Arctic peregrine falcon, least tern, and American oystercatcher. At low tide, wading birds such as the reddish egret, little blue heron, white ibis, and roseate spoonbill can be observed foraging in the shallow water surrounding Stiltsville. Shorebirds such as piping plover may also be observed foraging in the mud flats at low tide.

Currently, none of the fishes inhabiting the Biscayne National Park are listed on the state of Florida or federal threatened and endangered species list. However, the listing of marine fish has historically been a low priority and only recently have marine fish species been proposed for inclusion on national and international rare or endangered animal lists (Ault 2001). The National Marine Fisheries Service has classified Biscayne Bay, including Biscayne National Park, as essential fish habitat. The “Ecologically Critical Areas” section of this document discusses in detail essential fish habitat.

Table 6 lists the species that may be found in the vicinity of the structures, their scientific name, and their protection status with state and federal agencies.

The endangered seagrass *Halophila johnsonii* is reportedly found in the northern portions of Biscayne Bay near Virginia Key north of the park (NMF 2001). To date, there are no records of it occurring in the vicinity of Stiltsville.

Impacts that lead to the decline of the seagrasses in the vicinity of Stiltsville directly and indirectly affect all of the animals listed in the table. Other indirect impacts may occur as a result of human activity in the Stiltsville area. For example, loud boat watercraft engines or generators may startle fish and avifauna. The “Biological Resources” section discusses in detail sound impacts to wildlife. Swimming, diving, and throwing trash off the structures may disturb the substrate and cause increases in turbidity. Other impacts to protected species may occur as a result of direct physical contact. The protected species that may be the most directly affected by activities related to Stiltsville are the West Indian manatee and the five species of sea turtles.

*West Indian manatee:* A 2000 census of the West Indian manatee in Florida determined that there are only between 900 and 1000 within the waters of the east coast, and most of these are found in Brevard County. Although the census indicated that there are more manatees in Florida than originally thought, they are still dying in record numbers. The largest source of human-related manatee mortality is collisions with watercraft. Many living manatees exhibit scarring or wounds from watercraft propellers. A recent analysis of injuries to 406 manatees killed by watercraft and recovered between 1979 and 1991 indicated that 39 percent died from propeller cuts, 55 percent from impact with boat watercraft hulls, and 4 percent from both. The analysis determined that most of the propeller wounds were from medium to large boats, but the impact wounds were from fast-moving small or medium boats. Between 1986 and 2000, an average of 29 percent of all manatee deaths were caused by boat watercraft hull impacts or propellers.

**TABLE 6: ENDANGERED, THREATENED, AND SPECIAL CONCERN SPECIES  
PRESENT OR POTENTIALLY PRESENT IN THE VICINITY OF STILTSVILLE<sup>a/</sup>**

Common Name	Scientific Name	Observed	State Status <sup>b/</sup>	Federal Status <sup>b/</sup>
Roseate spoonbill	<i>Ajaia ajaja</i>	X	SSC	
Loggerhead sea turtle	<i>Caretta caretta</i>	X	T	T
Piping plover	<i>Charadrius melodus</i>	X	T	T
Atlantic green turtle	<i>Chelonia mydas mydas</i>	X	E	E
Leatherback sea turtle	<i>Dermochelys coriacea</i>	X	E	E
Little blue heron	<i>Egretta caerulea</i>	X	SSC	
Reddish egret	<i>Egretta rufescens</i>	X	SSC	
Snowy egret	<i>Egretta thula</i>	X	SSC	
Atlantic hawksbill sea turtle	<i>Erectmochelys imbricata</i>	X	E	E
White ibis	<i>Eudocimus albus</i>	X	SSC	
Arctic peregrine falcon	<i>Falco peregrinus tundris</i>	X	E	E
American oystercatcher	<i>Haematopus palliatus</i>	X	SSC	
Bald eagle	<i>Haliaeetus leucocephalus</i>	X	T	T
Kemp's ridley sea turtle	<i>Lepidochelys kemp</i>	X	E	E
Brown pelican	<i>Pelecanus occidentalis</i>	X	SSC	
Black skimmer	<i>Pynchops niger</i>	X	SSC	
Least tern	<i>Sterna antillarum</i>	X	T	
West Indian manatee	<i>Trichechus manatus latirostris</i>	X	E	E

a/ Sources: National Park Service 1978; Mulliken and VanArman 1995; park staff, personal communication.

b/ E = endangered; T = threatened; SSC = special concern; X = present.

Manatees prefer grazing on seagrass in shallow water adjacent to deep channels, similar to the habitat provided in Stiltsville (U.S. Fish and Wildlife Service 1993). Seagrasses are their favorite food, and they generally graze on the leaves of the grasses, leaving the roots intact. Manatees consume approximately 4 to 9 percent of their body weight daily, which requires about five continuous hours of grazing. Although they prefer seagrasses, manatees will eat virtually all forms of aquatic macrophytes, some algae, and occasionally fish (Smith 1993).

Manatees have been known to migrate as far north as the coast of Virginia in the summer, but return to the warm waters of southern Florida in the winter. Cold weather can kill manatees if they are unable to reach warm-water havens. A severe cold snap in 1996 is blamed for at least 118 mortalities. Manatees are often seen congregating in large groups in warm, spring-fed estuaries and bays and around power plant thermal effluent discharges.

*Sea turtles:* Sea turtles are among the largest living reptiles. They have scales and a bony shell, are cold-blooded and long-lived, and lay their eggs on land. Sea turtle populations have been in a steady decline, predominantly due to disturbance of nests, loss of nesting habitat, and commercial fishing. Other human-related impacts to sea turtles include the accidental ingestion of marine debris (such as plastic, tar balls, balloons, and fishing line), water quality degradation, and

collisions with boat hulls and propellers. Banning the harvest of sea turtles for food, enforcing the use of turtle excluder devices (TEDs) on shrimp boats, and preserving some nesting beaches appear to have stabilized some species. Accurate estimates of sea turtle populations are difficult to make due to their expansive range and motility. Of the five species listed in the above table, only the loggerhead, green turtle, and leatherback have been seen with any regularity in the vicinity of Stiltsville. The hawksbill turtle is usually associated with coral reef areas, and the Kemp's ridley is extremely rare. The adult green sea turtle is herbivorous, while the other species are either carnivorous or omnivorous. Green sea turtles are observed occasionally foraging on the seagrass beds around Stiltsville, while the other species forage on the myriad of fish and crustaceans that occur in these highly productive areas.

*Birds:* Bird species known to occur within the vicinity of Stiltsville fall into two categories – those that would be there whether Stiltsville existed or not, and those opportunistic species that take advantage of the artificial habitat provided by the structures. A discussion of the artificial attractant that the structures provide for some avifaunal species is provided in the “Biological Resources” section of this document.

Birds that would occur in the vicinity of Stiltsville regardless of the structures include wading birds and shorebirds. Wading birds are often observed in the vicinity of Stiltsville, foraging in depressions in the mudflats at low tide (Biscayne National Park staff, personal conversation). These birds include white ibis, roseate spoonbill, snowy egret, reddish egret, and little blue heron. Other birds that would normally occur in the vicinity are the black skimmer, piping plover, American oystercatcher, brown pelican, and least tern. These birds typically forage in near-shore habitats such as bays and estuaries.

Birds that have been observed using the structures in Stiltsville opportunistically include the bald eagle and the peregrine falcon. These two raptors have been observed taking smaller birds that stop to roost on the structures.

## **ECOLOGICALLY CRITICAL AREAS**

The Council on Environmental Quality guidelines (CEQ 1978) for implementing the National Environmental Policy Act requires an analysis of resources that would be considered ecologically critical areas. Within the Stiltsville area, ecologically critical areas include:

Essential fish habitat, as identified by the South Atlantic Fishery Management Council (SAFMC 1998); and

Habitat area of particular concern, as defined by the National Oceanic and Atmospheric Administration (1999) and mapped by the South Atlantic Fishery Management Council.

Fish habitat or the geographic area where the species occur at any time during its life, can be described by ecological characteristics, location, and time. Essential fish habitat includes waters and substrates that focus distribution; for example, coral reefs, marshes, or submerged aquatic vegetation, and other less distinct characteristics such as turbidity zones, salinity gradients, and water quality variation. Habitat use may change or shift over time due to climatic change, human activities and impacts, and/or other factors such as change with life history stage, species abundance, competition from other species, and environmental variability in time and space. The type of habitat available, its attributes, and its functions are important to species productivity, diversity, health, and survival (NMFS 1998 – Final Recommendations to Essential Fish Habitat).

The National Marine Fisheries Service has identified Biscayne Bay, including Biscayne National Park, as an essential fish habitat. Biscayne Bay also has been geographically defined as a habitat area of particular concern in Fishery Management Plan Amendments of the Gulf of Mexico, South Atlantic, and Caribbean Fishery Management Plans (NOAA 1999).

The South Atlantic Fishery Management Council has designated Biscayne Bay as a habitat area of particular concern for several species or species groups included in its jurisdiction. These include penaeid shrimp unit, red drum, snapper-grouper unit, spiny lobster, and live/hard bottom habitat. Coral and coral reefs are also designated within this unit, although very little coral occurs within the bay.

Biscayne Bay is characterized as an estuarine essential fish habitat. Estuarine is defined by National Oceanic and Atmospheric Administration as those waters, substrates, and associated biological communities within bays and estuaries of the Exclusive Economic Zone, from mean high water level (the high tide line), or the extent of upriver saltwater intrusion to the respective outer boundaries for each bay or estuary as defined in 33 CFR 80.1 (United States Coast Guard Lines of Demarcation).

The benthic habitats found in the Stiltsville area include seagrass beds and bare-bottom habitats and are described in detail in the “Biological Resources” section.

Appendix E lists species that have been observed or recorded in various databases as present in Biscayne Bay, species that are potentially located within the project area, or species that have prey items that are found in the project area (Ault 2001, Mulliken and VanArman 1995, Biscayne National Park – General Management Plan 1978 & 1983, and Biscayne National Park undated reports). The species listed in the appendix are listed in Fishery Management Plans and therefore

#### AFFECTED ENVIRONMENT

are included in essential fish habitat designations by the South Atlantic Fishery Management Council. Biscayne National Park, including the Stiltsville region, has been identified as essential fish habitat for various species.



## **CULTURAL RESOURCES**

The cultural resources within the vicinity of Stiltsville and a one-mile radius were evaluated for potential impacts. Cultural resources include historic resources, such as submerged archeological prehistoric and historic sites. There are no known submerged, prehistoric archeological sites identified around Stiltsville, and no traditional cultural properties have been identified in the Stiltsville area. The Keeper of the National Register denied a request from the State Historic Preservation Officer for addition of Stiltsville to the National Register of Historic Places, determining that Stiltsville does not meet the definition of a traditional cultural property. In addition, no cultural landscapes have been formally identified for the area, although some individuals in the local community deem the structures to be an important part of the viewshed (see “Visual Resources”). Museum collections are also a cultural resource, but there are no collections from within the project area or its general vicinity. Based on the above information, cultural landscapes, ethnographic resources, and collections will not be discussed further.

The lands and submerged bottomlands of Biscayne National Park are rich with archeological remains that represent the cultural history of southern Florida and the Florida Keys. Limited archeological surveys have revealed an abundance of shipwrecks and other historic maritime activity areas, Native American sites, and the remains of pioneer settlements. Over 100 archeological sites located within the park demonstrate the area's long-time international maritime heritage. Many of the park's cultural resources that are on the National Register of Historic Places are located within historic sites and districts.

Many of the local histories of Miami, southeast Florida, and the Florida Keys tend to overlook the islands and region represented by Biscayne National Park. However, the park's 42 islands, the northernmost extension of the Florida Keys, have not been subjected to the same level of development as the keys to their south. Due to restrictions after the park's formation in 1968, the park's keys are basically unaltered since their limited early 20th-century historic development, holding the archeological and historical evidence of earlier periods through modern times. Archeological and historical sites, long ago destroyed by industrial sprawl and residential development on the mainland and islands to the north and south of the park, can still be found in the keys and waters of Biscayne National Park.

## **HISTORIC RESOURCES**

Two attempts have been made to have Stiltsville placed on the National Register of Historic Places, with the latest occurring in October 1999. In a letter dated that month, the Keeper of the National Register stated, “Stiltsville does not meet the definition of a traditional cultural property.” The letter, included as Appendix F, further states that Stiltsville does not meet National Register standards for exceptional historical or architectural importance required of structures built within the last 50 years; all of the current structures have been constructed after 1960. Although none of the remaining structures are survivors of Stiltsville's beginnings, the denial of the designation for the National Register does not negate its colorful past or local historical importance.

## ARCHEOLOGICAL SUBMERGED SITES

### Prehistoric Period

Located some distance south of Stiltsville is the earliest prehistoric site found within the park, a midden marking the intensive settlement that began around 1,000 years ago. The site of a major Tequesta village, occupied over 1,000 years ago, lies north of Stiltsville. The Tequesta archeological sites found within the park could have been fishing and hunting camps used by the Tequesta that lived in this village. What are now referred to as Biscayne Bay and the Miami River was the Tequesta highway for trade, communication, and the source of maritime resources, not very different from today's cultural use of the area. West of Stiltsville, adjacent to the park, is the 10,000-year old Cutler Fossil site. A similar site is located to the south. The proximity of these sites to the Park, coupled with the fact that Biscayne Bay was inundated approximately 4,000 years ago, suggests that Biscayne National Park has the potential for even earlier submerged archeological sites than presently identified. All the Tequesta archeological sites located within and around Biscayne National Park appear to be contemporaneous, indicating that there was substantial human activity in the area prior to the contact period.

### Historic Period

The earliest positively identified submerged site in Biscayne National Park is from the mid-18th century. Since early European exploration of this region began in the early 16th century, it is feasible that submerged maritime archeological remains could be found that pre-date this site.

The natural channels through the sand bars to the south of Key Biscayne were once the only routes into northern Biscayne Bay and what is now the Miami Harbor area. Nautical charts from the late 19th century show marked natural channels through these sandbars, referred to as the "bars at the entrance of the bay." Prior to the early 20th century dredging of Government Cut, a deep water navigation channel leading to the port of Miami, the bars at the bay's entrance posed a serious hazard for ships entering the area, which increased as ships increased in size. By the 1920s major shipping traffic was diverted to the newly constructed Government Cut, away from the area that later became Stiltsville. A review of newspaper accounts from the turn of the 19th century up through the building of Government Cut Channel reveals numerous instances of major ship groundings in this area.

The remains of a shipwreck in the Stiltsville vicinity are believed to be a 75-foot wooden barge, now referred to as the Biscayne Channel Barge site. The barge remained in the same location until moved by Hurricane Andrew. Apparently the site is still relatively intact despite the disturbance, and the Barge site has been officially classified as an archeological site.

Hurricane Andrew destroyed 7 of the 14 structures in Stiltsville and damaged the remaining seven. A 1993 hydrographic survey was conducted within the periphery of the Stiltsville structures. The purpose of the survey was to locate post-Hurricane Andrew debris from the structures for removal before they posed a navigation hazard. The survey also attempted to identify any additional submerged cultural resources exposed by the storm, but results did not produce any evidence of significant submerged cultural resources in the vicinity.

## **VISITOR USE AND EXPERIENCE AND VISITOR SAFETY**

Biscayne National Park is open to the public year-round. Annual visitation approaches 500,000 visits, increasing by 30 percent between 1996 and 2001 (NPS 2001b). The heaviest visitation occurs during the summer months when the ocean waters are warm and seas are calm. Windy conditions, more common in the dry winter months, allow freedom from insect annoyance and greater comfort when exploring the islands of the park. Accommodations and/or concessions for park activities can be found at many locations along the shores of south Biscayne Bay, including the park's main visitor contact area at Convoy Point and waterfront parks such as Black Point Marina in Cutler Ridge and marinas in South Miami, Homestead and Key Largo.

Biscayne National Park is one of a unique group of public parks in this region established to protect and preserve portions of the only living coral reef in the continental United States. Biscayne National Park provides outstanding opportunities for visitors to learn about this and other important resources of the marine environment. Thirty miles to the south, at Key Largo, is John Pennekamp Coral Reef State Park – the first undersea park in the United States. These parks, together with 10 other state parks stretching southward through the Florida Keys, protect vital coral reef habitat resources (State of Florida 2000).

Most users are day use visitors who pursue a variety of activities in dispersed locations. Due to the nature of the park and its resources, most visitors experience the park by boat. Common activities pursued within the park include:

- Fishing,
- Snorkeling and scuba diving,
- Water skiing, windsurfing and boating, and
- Camping and overnight stays in private boats.

Organized activities sponsored by the park and associated concessioners include:

- Glass bottom boat trips for coral reef viewing (Atlantic side of barrier islands),
- Snorkeling and scuba diving trips,
- Canoe and kayak rentals, and
- A variety of Ranger's Choice Programs offering education and information in an informal setting.

Special programs highlight spiny lobster seminars during lobster season, coastal cleanup activities, storytelling, and boat safety and maintenance.

Most use of the park takes place in and on the waters of the park. The park maintains a 66-slip harbor at Elliott Key, where boaters may spend the day or night. Boaters may also tie up at Boca Chita Key's harbor. Anchorage can be found off Elliott and Sands Keys. All of these facilities can provide access to Biscayne National Park and the Stiltsville structures.

Annual boat launch estimates for nearby county facilities were provided by marina staff. A summary is provided in Table 7.

**TABLE 7: ANNUAL BOAT LAUNCH ESTIMATES**

<b>Marina</b>	<b>Estimated Usage</b>	<b>Reference</b>
Black Point Marina, Cutler Ridge	24,000 + annually	K. Hayes, pers. comm.
Crandon Park Marina, Key Biscayne	12,000 + annually	J. Travieso, pers. comm.
Homestead Bayfront Park, adjacent to visitor center	14,000 + annually	D. Winston, pers. comm.
Matheson Hammock Marina, South Miami	12,000 + annually	J. West, pers. comm.

These estimates are probably low and do not reflect boating use originating from other access points to the coastal waters north of the Miami area and in the keys to the south. Boating is an important recreational activity for many south Florida and Miami-area residents; boater registrations within Dade County alone totaled 55,660 in 2001 (Speights 2002).

Park staff noted that when asked, the majority of visitors do not know they are within national park boundaries. This is due in part to the difficulty of marking the boundaries of the park in open water. It is also due to the limited number of park staff that can be present in the northern portion of the park and the resulting limited amount of contact National Park Service rangers can make with the public.

Visitation to the Stiltsville site is difficult to estimate. Under the previous leases, the structures were used for individual and family activities, small group gatherings, and large social functions. Former leaseholders would also host activities for various local non-profit organizations, including Rotary Club, Boy and Girl Scouts and the Optimist Club. Estimated annual usage is about 1000 visitors per house, with up to 10,000 for the entire site (A. Baldwin, pers. comm.). The structures were used primarily on weekends by groups of 10 to 50 people at one time. On special weekends and holidays, gatherings of up to 200 people in a single structure have been reported, and as many as 50 boats have been reported moored to a single structure. Such events would occur several times each year. Boat groundings and unsafe visitor behavior were often associated with larger gatherings (letter to National Park Service).

Biscayne Channel, a main passage from Biscayne Bay to the open Atlantic, transects Stiltsville. All boat traffic from Matheson Park to Dinner Key in Miami uses this channel to go to the ocean, whether to fish, cruise, or visit the Bahamas. Many visitors who use the Stiltsville area, other than leaseholders, anchor on the sandbars. Unauthorized use of the bottom docks of the structures sometimes occurs when leaseholders are absent.

Environmental education is an important element of the south Florida school curriculum, affecting the nearly 375,000 students enrolled in the school district. The National Park Service is

active in providing and cooperating in opportunities for such education within the park and in the local school system.

The importance that the district places on environmental education is reflected by the Biscayne Nature Center for Environmental Education and by the Maritime and Science Technology High School. The Biscayne Nature Center was established by the district in 1971 to provide instructional programs that foster an awareness and appreciation of the natural world and promote an understanding of ecological concepts. Programs emphasize south Florida's special geologic features, natural resources, and habitats. The center encourages students to develop a sense of stewardship and to live harmoniously with vital native communities.

The center's programs feature one to two days of field investigations in the center's National Environmental Study Area located within Miami-Dade's Crandon Park on Key Biscayne. Teachers instruct approximately 120 students per day in hands-on environmental studies and observations within the center's varied ecosystems. Each year the center serves more than 10,000 students.

The Maritime and Science Technology High School (MAST Academy) within the Dade County school district is a nationally recognized U. S. Department of Education New American High School Showcase Site and Blue Ribbon School of Excellence with an innovative marine theme. The school is designed for 550 students in grades 9-12. MAST students use state-of-the-art technology and real-world laboratory equipment to experience hands-on learning in a curriculum focused on science and environmental education.

In 2001 the MAST Academy, the Ransom Everglades School, and the University of Miami's Rosensteil School of Marine and Atmospheric Science presented a proposal to the National Park Service and the Stiltville Committee of the National Park System Advisory Board to establish a base for research and education at Stiltville. That proposal is presented in Appendix D.

## **SOUND ENVIRONMENT/SOUNDSCAPE**

Sound environment (soundscape) includes existing and potential sources of natural sound, including potential sources of interference (noise) to natural sounds in the park. Soundscape may include both mechanical and natural sounds that may vary in character from day to night, and from season to season. Natural soundscape is created by natural processes, including but not limited to sound created by biological and physical components such as wind, flowing water, wave action, mammals, birds, and insects. Natural ambient sound is the natural soundscape condition that exists in the park in the absence of any human-produced noise. Sound affects on the flora and fauna of Stiltsville are discussed in detail in the “Biological Resources” section of this document.

The definition of noise for this analysis is any undesirable sound that interferes with speech communication and hearing, or is otherwise annoying (unwanted sound). Under certain conditions, noise may have a direct adverse effect on human health by causing hearing loss. Noise may also have an indirect effect by interfering with visitor activities or the quality of the visitor experience. Noise levels usually change continuously during the day, and exhibit daily, weekly, and yearly patterns.

Biscayne National Park is preparing a soundscape management plan. Currently this plan is in the early phase of development. Specific goals and objectives for soundscape protection and noise management will complement the existing management philosophy for resource and visitor activities in each of the management zones. Soundscape management goals for Stiltsville include:

- Compliance with soundscape objectives identified in the 1983 general management plan (i.e., the soundscape at Stiltsville would be commensurate with expectations associated with a maritime national park experience).

- Protection of soundscape values at Biscayne National Park by eliminating or reducing noise intrusions inconsistent with the park’s mission.

- Reduction of noise produced by Biscayne National Park operations and concessions activities, such as noise from VHF radios, generators, and mechanized equipment.

Many Biscayne National Park visitors come to enjoy the natural beauty and serenity of Biscayne Bay, including its soundscapes. Stiltsville’s soundscape includes the terrestrial and ambient air soundscape and the submerged, aquatic sound environments. Visitors to Biscayne National Park experience this natural sound resource by listening to breaking waves splashing under the structures, diving pelicans splashing into the water, thunderstorms and sea breezes rushing across the bay. Intermingled with these natural soundscapes are the sounds of maritime activities that add a human dimension to this terrestrial and aquatic landscape.

A range of noise-producing activities are associated with the use of Stiltsville. Noise from power boats (access and recreation), social events (gatherings of 10 or more people and music), generators, and routine maintenance activities contribute to the soundscape of this northern portion of the park. Stiltsville has always been a place for social activities and parties (see Stiltsville history). Many visitors accept the traditional use and social occasions of the Stiltsville

structures as a way of life in Biscayne Bay, while others consider the noise from such social activity as a disruption to the natural soundscape.

Biscayne Channel is a principal route for recreational watercraft accessing open water. Four of the Stiltsville structures are directly on Biscayne Channel. Over 50 boats pass through Biscayne Channel on an average weekday, with about twice that number daily on weekends. On holiday or party weekends, several hundred boats may traverse the channel daily.

## **VISUAL RESOURCES**

To some people, the remaining seven Stiltsville structures intrude on the continuous natural viewscape where they expect an uninterrupted expanse of ocean and blue skies. To others the structures are an integral part of the Miami and Biscayne Bay skyline, part and parcel of the area's regional history, representing a visual fantasy of escape from our terrestrial way of life. Throughout their 60-year tenure, these structures have maintained an idiosyncratic form juxtaposed on the visual horizon of this urban/coastal environment.

Visual resources are the physical features that makeup the visible landscape, including land, water, vegetation, and man-made features such as buildings, roadways and structures. These visual resources create and affect the aesthetic quality of the human environment. From these structures looking out over the bay, the visual resources comprise Biscayne Bay and coral islands within the park, creating a visual expanse of water, islands, and an unbroken vista of sea and sky. From the structures, looking landward, the view comprises the Miami skyline of skyscrapers, causeways, and seaports. From the mainland, the Stiltsville wooden structures, balanced precariously on what look like sticks, seem out of place in the midst of this modern urban setting, suggesting a time past.



## PARK OPERATIONS

The superintendent at Biscayne National Park is responsible for the full scope of managing the park, its staff, all its programs, and its relations with persons, agencies, and organizations interested in the park. Park staff provide the full scope of functions and activities to accomplish management objectives and meet requirements in law enforcement, emergency services, public health and safety, science, resource protection and management, visitor services, interpretation and education, community services, utilities, housing, fee collection, and management support.

Biscayne National Park management and operations are organized into the seven divisions listed in Table 8. As shown in the table, the park typically has a staff of approximately 55 people. Brief descriptions of the responsibilities of each division are included in the table.

**TABLE 8: TYPICAL STAFFING OF BISCAYNE NATIONAL PARK**

<b>Division</b>	<b>Typical Staffing Levels</b>	<b>Responsibilities</b>
Resource and visitor protection	10	Emergency response, law enforcement, boat grounding response, boating safety
Interpretation	10	Staff visitors' centers, conduct public outreach programs and education programs
Resource management	10	Manage natural resources within the park, respond to boat groundings
Administration	10	Perform administrative duties
Science	2 to 3	Coordinate and conduct research projects within the park, provide liaison with non-National Park Service researchers
Superintendent's office	2 to 3	Supervise park operations
Maintenance	10	Maintain and clean the park grounds, facilities, and equipment

Park headquarters and the Dante Fascell Visitor Center, the park's main visitor center, are located at Convoy Point in the southwest part of the park, approximately 22 miles from Stiltsville. A ranger station is located on Elliot Key. All functions that serve Stiltsville and the surrounding area originate from these locations.

## SOCIOECONOMICS

The Miami-Ft. Lauderdale metropolitan area is the 12th largest city in the United States, with a combined population exceeding 3.8 million. This represents a 21.4 percent increase since the 1990 census (Census Bureau 2000). The region of greater Miami, encompassing all of Miami-Dade County, is home to 2.25 million people. The Miami-Dade metropolitan area includes the communities of Homestead and Florida City, south of Miami and closest to the park's main visitor center. The city of Miami, at the heart of the metro area, has a population of approximately 400,000. The area has great ethnic diversity: 57 percent of residents are Hispanic, 21 percent are non-Hispanic whites, and 20 percent are African-American (Census Bureau 2000).

Castro's takeover of Cuba in 1959 initiated an influx of Cuban exiles, many well-educated, who left businesses and careers. Their presence brought new life to the city's economy, introduced Spanish as an essential regional language, and began Miami's evolution into a Latin American gateway. The most recent influx of Haitian immigrants has again changed Miami. Creole is now commonly heard throughout the city, and just east of downtown, a community known as Little Haiti has been established.

The median annual household income in the Miami area is \$30,000, compared to \$32,877 for the state of Florida. Approximately 21 percent of the population lives below the poverty level, compared to 14 percent for the state (Census Bureau 2000).

The economy of the region is led by tourism, commerce, and manufacturing. Miami is a destination city for tourists from around the globe. In 2000, 10.1 million tourists visited the Miami area, contributing \$13.3 billion to the local economy (W. Anderson, personal communication). Miami is the largest cruise ship terminal in the world and serves as the principal American gateway for travel to the Caribbean. The city is the processing and shipping hub of a large agricultural region and a major international trade port that generates approximately \$8 billion each year and employs 45,000 people (Miami Port Authority 2000).

Local manufacturing includes production of aluminum, clothing, furniture, machinery, and electronic components. Other important industries are printing and publishing as well as fishing and shellfishing. Miami is home to the National Hurricane Center and the headquarters of the U.S. Armed Forces Southern Command, responsible for military operations in Central and South America (Muller 2001).

The first non-natives settled the Miami area at Ft. Dallas during the Seminole War in 1836. Growth and development began in earnest after Henry Flagler built a railroad and terminus and dredged the harbor in the 1890s. Miami's tourism industry began to grow before World War I and continues today. In 1926, a massive hurricane swept through the area, killing more than 100 people and destroying numerous homes. An economic depression ensued; the Great Depression arrived in Miami three years before it affected the remainder of the nation (Muller 2001). During World War II, numerous training facilities for armed forces were established throughout Miami and other parts of Miami-Dade County. After the war, many veterans returned to the area to establish permanent residences.

The Miami urban center's proximity to Latin America brings in millions of dollars in international trade and commerce (Miami Port Authority 2000). Banking and international finance have become major functions of Miami's bilingual business community. This proximity also places the city along major drug trafficking routes. Crime is widespread and costly to the local economy. However, the tourism industry continues to grow, as evidenced by the recent revitalization of South Beach and Miami's port (Muller 2001).

In 1992, Hurricane Andrew, a category five storm, struck the South Miami and Homestead areas. Andrew shattered the single-storm damage estimate by causing \$15.5 billion in damage to insured property as well as massive uninsured losses; total losses may have been \$30 billion. Although damage was concentrated south of the urban center, Hurricane Andrew was the most destructive natural disaster in U.S. history in terms of property loss (Ayscue 1996). Normal economic activities of the metropolitan area were temporarily disrupted, but main transportation and financial centers were not directly damaged. The area began to recover quickly, and the recovery continues. During Hurricane Andrew, seven structures in Stiltsville were destroyed.

Hurricane Andrew also destroyed Homestead Air Force Base, a large military installation near Homestead and Florida City on a large tract of land adjacent to the south end of Biscayne Bay. Elimination of this facility removed a major part of the economy in this area. The U.S. Air Force considered many options for the site, finally adopting a plan for multiple-use (DOD 2001). The plan, currently being implemented, includes use of part of the property for an U.S. Air Force Reserve base. Reestablishing the economy of this area will probably increase visitor use and demand for marine services near Biscayne National Park.

Biscayne National Park recorded 489,343 recreational visits in 2001, with an accompanying operating budget of \$2.46 million. The park's budget was increased to \$3.44 million for fiscal year 2001.

Total visitation to Stiltsville is estimated at 8,000 to 10,000 annually. The many social and charitable gatherings occurring at the site likely draw just over 1,000 visitors per structure each year. (A. Baldwin, personal communication).

Although approximately 10 million visitors come to Miami each year, relatively few non-residents have the opportunity to experience Biscayne National Park. Most of the park and its protective islands are accessible only by boat, and tourists do not generally have ready access to boats. Park sites accessible by land are not in high-traffic tourist areas. The park provides daily concession operator boat tours to the islands and reefs; however, the vast majority of recreation visits to Biscayne National Park are from local residents using private boats and watercraft (Lockwood and Perry 1998, 1997).

Miami-Dade Parks and Recreation maintains six marinas, with a total of 900 boat slips, on Biscayne Bay (K. Haley, personal communication). Four of these facilities are in proximity to Biscayne National Park. Public boat launches at these marinas recorded nearly 62,000 launches of private vessels into Biscayne Bay annually (see "Visitor Use and Experience and Visitor Safety" section). The city of Miami operates three marinas, with a total capacity of 967 boats (City of Miami 2000). In addition, numerous private marinas, with capacities from several hundred to less than one dozen, are situated along the shores of Biscayne Bay.

## AFFECTED ENVIRONMENT

Due to travel time constraints and fuel costs, boaters from harbors and marinas in the northern portion of the bay would be more likely to visit or observe the Stiltsville structures. A study conducted to determine boat use patterns in Miami-Dade County determined that most vessels are launched on boat ramps closest to their destination (BRC 1991); therefore marinas located in South Miami (e.g., Matheson Hammock, Black Point) are more likely to affect visitation to Stiltsville. For boaters leaving the Bay for the open Atlantic, contact with the Stiltsville structures would be determined by use of the Biscayne Channel as they exit and enter the Bay.

## ENVIRONMENTAL CONSEQUENCES

### GENERAL METHODOLOGY FOR ESTABLISHING IMPACT THRESHOLDS AND MEASURING EFFECTS

#### GENERAL ANALYSIS METHOD

The interdisciplinary planning team created a process for impact assessment, based on the directives of the Director's Order #12 handbook (Section 4.5(g)).

For each impact topic, applicable regulations were identified and the techniques used to perform the analysis were defined. Each impact topic analysis then involved the following steps:

Define issues of concern based on public scoping.

Identify the geographic area that could be affected.

Define the resource within the area that could be affected. This information is included in the "Affected Environment" section.

Compare the resources to the area of potential effect.

Identify the effects caused by the alternative, in comparison to the no action alternative that would result in removal of the Stiltsville structures, to determine the relative change in resource conditions. Characterize the effects based on the following factors:

Whether the effect would be beneficial or adverse.

The area affected by the alternative, such as local or regional.

Duration of the effect, either short-term or long-term. Unless an impact-topic-specific definition of these terms is provided, the following were used:

A short-term impact would last only a few days or weeks.

A long-term impact would last several years or more, or would recur periodically over several years.

Whether the effect would be a direct result of the action or would occur indirectly because of a change to another impact topic. An example of an indirect impact would be increased mortality of an aquatic species that would occur because an alternative would increase substrate disturbances, which would reduce water quality.

The intensity of the effect, whether negligible, minor, moderate, or major. Impact-topic-specific thresholds for each of these classifications are provided in each impact topic methodology section. Threshold values were developed based on federal and state

standards, consultation with regulators from applicable agencies, and discussions with subject matter experts.

Table 9 summarizes the criteria used to define the intensities of the impacts for each impact topic.

Determine whether impairment would occur to resources and values that are considered necessary and appropriate to fulfill the purposes of Biscayne National Park.

Determine cumulative effects by evaluating the effect in conjunction with the past, current, or foreseeable future actions for Biscayne National Park and the region.

If appropriate, identify mitigation measures that may be employed to offset potential adverse impacts.

## **IMPAIRMENT ANALYSIS METHOD**

*Management Policies 2001* (National Park Service 2000b) require analysis of potential effect to determine whether or not actions would impair park resources or values.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, actions that would adversely affect park resources and values.

These laws give the National Park Service the management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement (enforceable by the federal courts) that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise.

The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Impairment may result from National Park Service activities in managing the park, from visitor activities, or from activities undertaken by concessioners, contractors, and others operating in the park.

An impact on any park resource or value may constitute impairment. However, an impact would be most likely to constitute impairment if it affects a resource or value whose conservation is:

Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;

Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or

**TABLE 9: BISCAYNE NATIONAL PARK GENERAL MANAGEMENT PLAN AMENDMENT IMPACT THRESHOLD DEFINITIONS**

Impact Topic	Impact Threshold Definition			
	Negligible	Minor	Moderate	Major
Natural resources				
Water quality	Water quality would not be affected, or changes would be either non-detectable or if detected, would have effects that would be considered slight, local, and short-term.	Changes in water quality would be measurable, although the changes would be small, short-term, and the effects would be localized. No mitigation measure associated with water quality would be necessary.	Changes in water quality would be measurable and long-term but would be relatively local. Mitigation measures associated with water quality would be necessary and the measures would likely succeed.	Changes in water quality would be readily measurable, would have substantial consequences, and would be noticed on a regional scale. Mitigation measures would be necessary and their success would not be guaranteed.
Biological resources	Biological resources would not be affected or the effects would be at or below the level of detection, would be short-term, and the changes would be so slight that they would not be of any measurable or perceptible consequence to the biological resources.	Effects to biological resources would be detectable, although the effects would be short-term, localized, and would be small and of little consequence to the species' population. Mitigation measures, if needed to offset adverse effects, would be simple and successful.	Effects to biological resources would be readily detectable, long-term, and localized, with consequences at the population level. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.	Effects to biological resources would be obvious, long-term, and would have substantial consequences to biological resources in the region. Extensive mitigation measures would be needed to offset any adverse effects and their success would not be guaranteed.
Endangered or threatened species	No federally listed species would be affected or the alternative would affect an individual of a listed species or its critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence to the protected individual or its population. Negligible effect would equate with a "no effect" determination in U.S. Fish and Wildlife Service terms.	The alternative would affect an individual(s) of a listed species or its critical habitat, but the change would be small and would be short-term. Minor effect would equate with a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely..." or "not likely to adversely affect" the species.	An individual or population of a listed species, or its critical habitat would be noticeably affected. The effect would have some long-term consequence to the individual, population, or habitat. Moderate effect would equate with a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely..." or "not likely to adversely affect" the species.	An individual or population of a listed species, or its critical habitat would be noticeably affected with a long-term, vital consequence to the individual, population, or habitat. Major effect would equate with a "may effect" determination in U.S. Fish and Wildlife Service terms and would be accompanied by a statement of "likely..." or "not likely to adversely affect" the species.

**TABLE 9: BISCAYNE NATIONAL PARK GENERAL MANAGEMENT PLAN AMENDMENT IMPACT THRESHOLD DEFINITIONS  
(CONTINUED)**

Impact Topic	Impact Threshold Definition			
	Negligible	Minor	Moderate	Major
Ecologically critical areas	Resources that define and are essential to the critical area or ecological processes that sustain the critical area would not be affected or the effects would be at or below the level of detection, would be short-term, and the changes would be so slight that they would not be of any measurable or perceptible consequence to the ecologically critical area.	Effects to resources that define and are essential to the critical area or ecological processes that sustain the critical area would be detectable, although the effects would be short-term, localized, and would be small and of little consequence to the critical area. Mitigation measures, if needed to offset adverse effects, would be simple and successful.	Effects to resources that define and are essential to the critical area or ecological processes that sustain the critical area would be readily detectable, long-term and localized, with consequences at the population level. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.	Effects to resources that define and are essential to the critical area or ecological processes that sustain the critical area would be obvious; the effects would be long-term and would have substantial consequences at the population level. Extensive mitigation measures would be needed to offset adverse effects and their success would not be guaranteed.
Cultural resources	The impact is at the lowest levels of detection – barely perceptible and not measurable.	For cultural resources, the impact affects on a site(s) with modest data potential and no significant ties to a living community’s cultural identity. The impact does not affect the character defining features of a National Register of Historic Places eligible or listed structure, district, or cultural landscape.	For cultural resources, the impact affects a site(s) with high data potential and no significant ties to a living community’s cultural identity. For a National Register eligible or listed structure, district, or cultural landscape, the impact changes a character-defining feature(s) of the resource but does not diminish the integrity of the resource to the extent that its National Register eligibility is jeopardized.	For cultural resources, the impact affects a site(s) with exceptional data potential or that has significant ties to a living community’s cultural identity. For a National Register eligible or listed structure, district, or cultural landscape, the impact changes a character defining feature(s) of the resource, diminishing the integrity of the resource to the extent that it is no longer eligible to be listed in the National Register.
Socioeconomic considerations				
Visitor use and experience	Visitors would not be affected or changes in visitor experience or safety would be below or at the level of detection. Any effects would be short-term. The visitor would not likely be aware of the effects associated with the alternative.	Changes in visitor experience or safety would be detectable, although the changes would be slight and likely short-term. The visitor would be aware of the effects associated with the alternative, but the effects would be slight.	Changes in visitor experience or safety would be readily apparent and likely long-term. The visitor would be aware of the effects associated with the alternative and would likely be able to express an opinion about the changes.	Changes in visitor experience or safety would be readily apparent and have important long-term consequences. The visitor would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes.



**TABLE 9: BISCAYNE NATIONAL PARK GENERAL MANAGEMENT PLAN AMENDMENT IMPACT THRESHOLD DEFINITIONS  
(CONTINUED)**

Impact Topic	Impact Threshold Definition			
	Negligible	Minor	Moderate	Major
Visitor safety	The impact to public health and safety is not measurable or perceptible.	The effect is measurable or perceptible, and is limited to a relatively small number of individuals at localized areas. Impacts to health and safety may be realized through a minor increase or decrease in the potential accidents or hazards in current accident and hazard areas.	The impact to public health and safety is sufficient to cause a permanent change in accident rates or exposure to hazards at existing low accident and hazard locations or create the potential for additional accidents or hazards in areas that currently do not exhibit noticeable accident rates or exposure to hazards.	The impact to public health and safety is substantial either through elimination of potential hazards or the creation of new areas with a high potential for serious accidents or hazards.
Sound environment/ soundscape	Natural sound environment would not be affected or the effects would be at or below the level of detection, would be short-term, and the changes would be so slight that they would not be of any measurable or perceptible consequence to the visitor experience or to biological resources.	Effects to the natural sound environment would be detectable, although the effects would be short-term, localized, and would be small and of little consequence to the visitor experience or to biological resources. Mitigation measures, if needed to offset adverse effects, would be simple and successful.	Effects to the natural sound environment would be readily detectable, long-term and localized, with consequences at the regional or population level. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.	Effects to the natural sound environment would be obvious, long-term, and would have substantial consequences to the visitor experience or to biological resources in the region. Extensive mitigation measures would be needed to offset any adverse effects and their success would not be guaranteed.
Visual resources	The visual quality of the landscape would not be affected or the effects would be at or below the level of detection, would be short-term, and the changes would be so slight that they would not be of any measurable or perceptible consequence to the visitor experience.	Effects to the visual quality of the landscape would be detectable, although the effects would be short-term, localized, and would be small and of little consequence to the visitor experience. Mitigation measures, if needed to offset adverse effects, would be simple and successful.	Effects to the visual quality of the landscape would be readily detectable, long-term and localized, with consequences at the regional level. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.	Effects to the visual quality of the landscape would be obvious, long-term, and would have substantial consequences to the visitor experience in the region. Extensive mitigation measures would be needed to offset any adverse effects and their success would not be guaranteed.
Park operations	Park operations would not be affected or the effect would be at or below the lower levels of detection, and would not have an appreciable effect on park operations.	The effect would be detectable and likely short-term, but would be of a magnitude that would not have an appreciable effect on park operations. If mitigation were needed to offset adverse effects, it would be relatively simple and likely successful.	The effects would be readily apparent, be long-term, and would result in a substantial change in park operations in a manner noticeable to staff and the public. Mitigation measures would probably be necessary to offset adverse effects and would likely be successful.	The effects would be readily apparent, long-term, would result in a substantial change in park operations in a manner noticeable to staff and the public and be markedly different from existing operations. Mitigation measures to offset adverse effects would be needed, would be extensive, and their success could not be guaranteed.

**TABLE 9: BISCAYNE NATIONAL PARK GENERAL MANAGEMENT PLAN AMENDMENT IMPACT THRESHOLD DEFINITIONS  
(CONTINUED)**

Impact Topic	Impact Threshold Definition			
	Negligible	Minor	Moderate	Major
Socioeconomics	No effects would occur or the effects to socioeconomic conditions would be below or at the level of detection. The effect would be slight and no long-term effects to socioeconomic conditions would occur.	The effects to socioeconomic conditions would be detectable, although short-term. Any effects would be small and if mitigation is needed to offset potential adverse effects, it would be simple and successful.	The effects to socioeconomic conditions would be readily apparent and likely long-term. Any effects would result in changes to socioeconomic conditions on a local scale. If mitigation is needed to offset potential adverse effects, it could be extensive, but would likely be successful.	The effects to socioeconomic conditions would be readily apparent, long-term, and would cause substantial changes to socioeconomic conditions in the region. Mitigation measures to offset potential adverse effects would be extensive and their success could not be guaranteed.

Identified as a goal in the park's general management plan or other relevant National Park Service planning documents.

A determination on impairment is included in the impact analysis section for all impact topics relating to Biscayne National Park resources and values. It is based on the impact-topic-specific definition of impairment that is provided in the methodology section for each impact topic that addresses Biscayne National Park resources or values.

## **CUMULATIVE EFFECTS ANALYSIS METHOD**

The Council on Environmental Quality (1978) regulations for implementing the National Environmental Policy Act require assessment of cumulative effects in the decision-making process for federal actions. Cumulative effects are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 *Code of Federal Regulations* 1508.7). Cumulative effects are considered for the no action alternative and the action alternatives.

Cumulative effects were determined by combining the effects of the alternative with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other past, ongoing, or reasonably foreseeable future actions within Biscayne National Park and in the surrounding region. These actions were identified in the “Connected, Cumulative, and Similar Actions” section. Most evaluations of cumulative effects were qualitative.

## **ENVIRONMENTAL ANALYSIS ORGANIZATION**

Impact topics retained for discussion were described earlier in the “Purpose and Need for the Plan” section. For each impact topic, a brief description of the affected environment relative to the management of the Stiltsville area is provided. An analysis methodology specific to that impact topic, including issues that were identified during scoping, is presented along with relevant regulations and policies. The four alternatives are then evaluated for each of the issues.

## WATER QUALITY

### METHODOLOGY

The first step in determining the effects of the alternatives to water quality was to define the water quality issues of concern to regulators, the public, and other stakeholders. These were determined based on input received during project planning and scoping.

Where water quality changes could cause indirect impacts to the area's plants and animals, those effects are evaluated in the "Biological Resources" section. Water quality impacts of the four alternatives for managing Stiltsville were evaluated based on the following issues:

Disturbance of sediments. Increased disturbance of the bay floor would increase suspended sediments in the water and increase sediment deposition on aquatic life. Disturbance of sediments could also make buried toxicants available to aquatic life by reintroducing them into the water column.

Leaching of chemicals from pretreated lumber into the bay's waters. The chemicals leach from lumber that comes into contact with the salt water or that is exposed to rain and salt spray.

Use and storage of fuels used in internal combustion engines in boats, motorized watercraft, and generators. Two-cycle engines, which discharge an oil-gas mixture into the water during operation, were particularly identified as being a contaminant source. Multiple concerns were identified, including the effects of:

Unburned petroleum hydrocarbons.

Fuel additives or trace components, including benzene, toluene, ethylbenzene, and xylenes; methyl tertiary butyl ether (MTBE); and polyaromatic hydrocarbons.

Increased toxicity of chemicals because of interactions in the environment. For example, polyaromatic hydrocarbons released from boat watercraft engines may become more toxic in the presence of sunlight, which could result in mortality of plankton and/or stunt fish growth (Orris *et al.* 1998).

Use and storage of toxic chemicals which could be spilled or dumped into the water. Examples include cleaners, paints, varnishes, and wood-treating chemicals.

Inappropriate storage and disposal of waste products. These include household trash, bilge water, wash and rinse waters, cooking oils, food preparation wastes, and human sewage.

Concentration of bird excrement in a small area. This could result from birds roosting on the structures.

Changes in attitudes and behavior about water quality by the public, both around Stiltsville and throughout the bay, because of education received at Stiltsville.

Each of these issues was evaluated using the procedures described in the "General Methodology" section. The intensities of effects on water quality were determined using the criteria in Table 9.

## REGULATIONS AND POLICIES

Numerous federal and state laws protect water quality, including the discharge of toxic materials, sewage, and sediment into the nation's waters. Key among these is the Clean Water Act (33 U.S. Code 1251 et seq.) and its implementing regulations in the *Federal Code of Regulations*. Key Florida legislation includes the Florida Water Resources Act of 1972 (Chapter 373, Florida Statutes). Water quality and activities that may affect water quality within Biscayne Bay are regulated and/or monitored by multiple federal, state, regional, and local agencies. Key federal and state agencies are listed below.

### Federal Agencies

National Park Service

U.S. Army Corps of Engineers

U.S. Coast Guard

U.S. Environmental Protection Agency

Natural Resources Conservation Service

U.S. Fish and Wildlife Service

U.S. Geological Survey

National Oceanic and Atmospheric  
Administration

### State Agencies

Florida Department of Environmental Protection

Florida Department of Health and Rehabilitative Service

Florida Inland Navigation District

Florida Department of Community Affairs

Florida Marine Fisheries Commission

Florida Department of Agricultural and Consumer Services

Florida Department of Transportation

Florida Fish and Wildlife Conservation Commission

In addition, the National Park Service, the south Florida Water Management District, and the south Florida Regional Planning Council are the main regional agencies with jurisdictional authority over Biscayne Bay (Mulliken and VanArman 1995).

The south Florida Water Management District's authority is the management and protection of surface water and ground water, and for the development and implementation of the Surface Water Improvement and Management Plan for Biscayne Bay.

The south Florida Regional Planning Council develops regional policies and comprehensive plans for the protection of the bay and assesses impacts of proposed developments.

Local county and municipal governments have the authority to control land uses that may affect water quality in Biscayne Bay. In addition, county agencies conduct resource studies, and implement and enforce local and delegated state water quality regulations. As mentioned previously, water quality monitoring is performed by the Miami-Dade County Department of Environmental Resources Management.

## IMPACTS OF ALTERNATIVE A (MANAGED BY A NON-PROFIT ORGANIZATION)

Impacts to water quality could occur to Biscayne Bay as a result of activities related to the implementation of Alternative A. Such activities include the operation of watercraft accessing the structures, the initial rehabilitation of the structures for public use, routine maintenance of the structures, demolition of unsalvageable portions of the structures, and activities associated with the public and private use and operations of the structures. The effects of Alternative A are evaluated against the no action Alternative D, which proposes the permanent removal of all seven structures from Biscayne Bay; therefore the intensity of impacts of Alternative A are compared to all existing

natural and man-made components of this land/seascape, with the exception of the structures and visible activities associated with Stiltsville.

Opening the Stiltsville structures for public use would require upgrades to the structural integrity of the buildings (Phang 2000) and to ensure compliance with the south Florida Building Code. Many of the buildings' components would need reinforcement or replacement. Construction activities would involve the use of heavy equipment within the shallow flats areas or shoals, which may result in bay bottom disturbance, resuspension of sediments, and an increase in turbidity. The Stiltsville non-profit organization would direct that all construction and maintenance activities employ best management practices for the operation of barges, control of turbidity, and control of polluting material. These impacts would be minor and temporary if construction were accomplished in a responsible manner using the latest turbidity control technology. Considering the high volume movement of water around the structures during tidal flows, chemicals that may be present in existing structure materials would cause negligible, long-term, adverse impacts that would be localized.

Reconstruction standards would direct that improvements to pilings, decks, and other construction typically requiring timber products would be built with recycled plastic products manufactured especially for marine environments, or other materials that would be structurally appropriate but without harmful chemicals. This material has several commercial names (Seapiles™, Carefree Lumber™, and others), but all are made from 100 percent post-consumer recycled high-density polyethylene (HDPE). The lumber can be used like wood, but it does not rot, splinter, leach chemicals, or require paint, anti-fouling agents, or preservatives. It is usually guaranteed against damage from moisture, insects, marine borers, and molds for at least 50 years by the manufacturers (<http://www.plasticlumberyard.com/warranty.htm>). Use of these materials would reduce leaching of harmful chemicals and result in long-term beneficial effects that would be of negligible intensity.

The Stiltsville organization would regulate access to the structures. This would occur through requirements placed on entities using and managing the structures to provide skilled or certified boat pilots, clearly marking channels, and implementing wakeless zones. With these controls in place and considering the high volume movement of water around the structures during tidal flows, chemicals that may be emitted from watercraft would cause negligible, long-term, adverse impacts that would be localized.

The structures provide a roosting area for various aquatic birds, sometimes in quantities of a hundred or more; bird deterrent devices have had little effect. The excrement from these birds builds up, especially during periods of little rainfall. While it is unlikely that enough excrement is present to create water quality problems, it is potentially a health hazard and would have adverse effects that would be negligible and short-term.

The information provided by the non-profit organization or its partners at the education facilities would heighten the awareness of the fragility of the estuarine environment. This would result in instilling in more people a respect for the environment and a sense of responsibility regarding the use of the natural resources remaining on the planet. Additionally, guidelines and regulations that direct the appropriate collection, treatment, and disposal of sewage would be implemented. These may include such requirements as:

Boaters would be encouraged to use oil-absorbing materials in the bilges of all boats with inboard engines.

Fuel for the generators would be kept in spill- and corrosion-proof containers with secondary containment to prevent accidental discharges. The use of propane gas generators would be recommended for emergency power, with solar or wind power as the baseline power source.

All trash containers would be made of heavy-duty plastic and secured to decks. The containers would be kept covered to prevent accidental release of trash into the bay.

Sewage containment facilities would be installed and waste removal services will be required.

Use of biodegradable household cleaners such as soaps and detergents within the Stiltsville complex would be encouraged, and amounts used would be kept to a minimum. Consistent with practices elsewhere in the park, cleaners such as Simple Green® would be used, and detergents containing ammonia, sodium hypochlorite, petroleum distillates, lye, or chlorinated solvents would not be used.

Traffic in the Stiltsville areas outside the Biscayne Channel would be minimized. Speeds no greater than headway speeds in shallow water would be enforced. Operators would be trained by the organization managing the structure to ensure that they would be familiar with access routes.

Repairs and new construction would use recycled plastic marine lumber wherever possible. All improvements or activities would use environmentally friendly methods and materials whenever possible.

Buoys demarcating access routes to the structures would be installed to allow improved ingress and egress, while minimizing damage to seagrass beds.

Implementation of these guidelines would lessen the adverse effects to water quality associated with use of the structures in the future.

The precautions taken during the construction and operation of the Stiltsville structures would minimize increases in turbidity and the sedimentation of the seagrass beds, and the stricter controls on waste handling and removal would reduce the introduction of pollutants into the water column. Long-term, indirect, beneficial effects would result from the implementation of the educational program. This alternative would provide an opportunity to educate people about the environment while immersed in it.

### **Cumulative Effects**

While the activities conducted in and around the Stiltsville structures can have an incremental effect on the water quality of Biscayne Bay, this impact is negligible when compared to the overall cumulative effect of other activities in and around Biscayne Bay. For example, when compared to the cumulative water quality impacts of large marinas such as Dinner Key, and to stormwater discharges from the Miami River, Snapper Creek and Coral Gables Waterway, discharges from Stiltsville are insignificant (Mulliken and VanArman 1995).

The negative impacts to the water quality of the local environment due to the implementation of Alternative A would likely be direct, negligible, and long-term. The tidal flushing that occurs across the Safety Valve shoals is strong and sustained, and it is unlikely that there would be any impacts to the local water quality (Curry, Science Coordinator, pers. comm.). Pollutants would be quickly mixed

with the waters of either the Florida Straits or Biscayne Bay. The pollutants that may be generated by the activities on and around the Stiltsville structures would be negligible when compared to the pollutant discharges occurring from the Miami River, Snapper Creek, Dinner Key, Matheson Hammock, Paradise Point, and the cruise ships in the Gulf Stream. As mentioned previously, the monitoring stations in the vicinity of Stiltsville have consistently reported that the water quality in Stiltsville is good to fair when compared to state water quality standards.

### **Conclusion**

With the adoption of these best management practices, the implementation of Alternative A would result in negligible to minor, adverse impact to the water quality in the Stiltsville area, and would have a negligible cumulative effect on Biscayne Bay. There would be a long-term, indirect, beneficial impact as a result of the educational, social, and research programs that would be initiated with the implementation of the proposed action. Activities associated with Alternative A would contribute negligibly to the adverse effects on water quality that result from increased urbanization and recreation in south Florida.

Alternative A would not produce major adverse impacts on water quality or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of water quality or values as a result of the implementation of Alternative A.

### **IMPACTS OF ALTERNATIVE B (NATIONAL PARK SERVICE MANAGEMENT FOR PUBLIC USE)**

The implementation of Alternative B would likely have similar effects on water quality in the vicinity of Stiltsville and Biscayne Bay as Alternative A. Like Alternative A, Alternative B would provide a park presence either within Stiltsville, on Key Biscayne, or somewhere in the vicinity. If the structures are open to the public under the guidance and control of the National Park Service, watercraft traffic management, construction practices, waste and chemical handling, and public education programs would be similar to Alternative A. Watercraft activity in the Stiltsville area would not be significantly different with this alternative than that of Alternative A.

### **Cumulative Effects**

Cumulative effects would be similar to Alternative A.

### **Conclusion**

With the adoption of these best management practices, the implementation of Alternative B would result in negligible to minor adverse impact to the water quality in the Stiltsville area, and would have a negligible cumulative effect on Biscayne Bay. There would be a long-term, indirect beneficial impact as a result of the educational, social, and research programs that would be initiated with the implementation of the proposed action. Activities associated with Alternative B would contribute negligibly to the adverse effects on water quality that result from increased urbanization and recreation in south Florida.



Alternative B would not produce major adverse impacts on water quality or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of water quality or values as a result of the implementation of Alternative B.

### **IMPACTS OF ALTERNATIVE C (COMPETITIVE LEASING FOR PUBLIC USE)**

The effects on the water quality of Stiltsville and Biscayne Bay resulting from the implementation of Alternative C would likely be similar to those of Alternatives A and B. Alternatives A, B, and C would provide a park presence either within Stiltsville, on Key Biscayne, or somewhere in the vicinity, to regulate and monitor watercraft traffic and the activities on the structures, and would place the same access controls on public uses of the structures as in Alternatives A and B. Alternative C provides similar regulations with respect to the types of uses and the number of occupants on the structures, but with the competitive lease program, it is likely that one or more of the structures would be leased for private use. This may result in increased use of several of the structures on weekends and holidays, but overall watercraft activity in the Stiltsville area may be somewhat less than that of Alternative A or B, so the probability of accidental groundings, fuel discharges, or spills may be lower. The use of structures for private purposes may increase the likelihood that a visitor would not have the appropriate navigation skills and could increase opportunities for turbidity from bay bottom disturbances. This would result in negligible, adverse, short-term effects on water quality. However, the likelihood of these impacts occurring with the implementation of the other alternatives has been determined to be negligible.

The implementation of Alternative C would not reduce the number of structures in Stiltsville, so the impacts from the bird excrement would be the same. As with the other action alternatives, this impact would be negligible. The potential for leaching of chemicals from the structures would be similar to that for Alternatives A and B in that the same requirements for use of environmentally friendly construction products would apply for this alternative. The requirements for the containment and removal of sanitary sewer wastes would also be the same, despite the fact that some of the structures may be leased for private use. The potential that some of the structures may be leased for private use may also reduce the availability of the structures for public education and would result in a negligible adverse effect on water quality, especially if some National Park Service presence was maintained at or near Stiltsville.

### **Cumulative Effects**

Cumulative effects would be similar to Alternative A.

### **Conclusion**

With the adoption of these best management practices, the implementation of Alternative C would result in negligible to minor, adverse impact to the water quality in the Stiltsville area, and would have a negligible cumulative effect on Biscayne Bay. There would be a long-term, indirect, beneficial impact as a result of the educational, social, and research programs that would be initiated with the implementation of the proposed action.

Alternative C would not produce major adverse impacts on water quality or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of water quality or values as a result of the implementation of Alternative C.

### **IMPACTS OF ALTERNATIVE D (REMOVAL OF STRUCTURES)**

Under this action, there would be negligible, short-term adverse impacts to water quality during the demolition and removal of the structures. The short-term impacts may include disturbance of the sediments by the demolition equipment during the removal procedure, but the potential for these impacts would be reduced if the demolition were conducted during high tide and from a shallow draft barge. There would be a remote potential for impacts to the sediments as a result of debris falling from the structure during demolition, but use of best management practices during demolition would minimize this potential.

Short-term, negligible, adverse impacts may occur as a result of accidental releases of toxic or hazardous materials from the structures, including sewage from holding tanks. The majority of these materials would be removed prior to the demolition effort, but the potential remains for these substances to be released during their removal or during demolition. The implementation of best management practices would minimize the potential release of these substances. Such practices include the placement of floating booms around the structures during demolition, implementing a spill prevention plan prior to initiating the demolition, and having clean-up materials on hand at all times.

The release of watercraft fuel and the opportunity for boat-caused turbidity would be reduced in this area because the watercraft traffic in the shoals would be reduced. Without the structures as an attractant, the majority of the watercraft traffic would be passing through in the Biscayne Channel. This would result in negligible to minor, long-term beneficial effects due to reduced emissions and turbidity from watercraft.

Other potential water quality impacts considered during this analysis are the leaching of chemicals from the structures and/or spills of sewage or hazardous chemicals. Removal of the structures would result in minor to moderate, long-term, beneficial effects on water quality in localized areas.

There would be negligible, long-term, adverse impacts with no potential for public education if the structures were removed. The removal of the structures would remove the potential facilities for research, public education, and other public benefits.

### **Cumulative Effects**

The cumulative effects of the removal action would be negligible to minor and beneficial to water quality. Watercraft traffic in the vicinity would be reduced, thereby reducing the potential increases in turbidity. The historical effects of the chemicals leaching from the structures and from occasional spills of sewage or toxic or hazardous materials would diminish over time, and if no other impacts occur, the water quality around Stiltsville would continue to improve. A reduction in watercraft traffic in the shoals area would result in a reduction in the release of watercraft fuel in that area. Boat traffic in the Biscayne Channel would continue and the presence of urban pollutants from the metropolitan

area would continue. The cumulative effects from this alternative would be beneficial and negligible in the long-term.

## **Conclusion**

Demolition of the structures at Stiltsville would result in localized, short-term, negligible to minor, adverse effects on water quality with implementation of best management practices. Removal of the structures would result in a reduction of watercraft traffic in the area that would represent a negligible to minor, long-term benefit to water quality. Minor to moderate, long-term benefits to water quality in the area would accrue from the elimination of spills, sewage, or hazardous materials entering the water associated with use of the structures. There would be long-term, indirect, adverse impacts resulting from a lack of educational, social, and research programs with implementation of the no action alternative. The cumulative effects of this alternative would be beneficial and negligible.

Alternative D would not produce major, adverse impacts on water quality or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of water quality or values as a result of the implementation of Alternative D.

## BIOLOGICAL RESOURCES

This section includes all life forms, including flora and fauna, which represent an important component of aquatic biomass. Biological resources afforded special protection are discussed in additional detail in the sections “Endangered or Threatened Species” and “Ecologically Critical Areas.”

## METHODOLOGY

The effects of the alternatives on the biotic communities were determined by defining the issues of concern to regulators, the public, and other stakeholders, as identified during project planning and scoping. They include:

The improper disposal of solid waste materials may affect biological resources. Effects may include the accidental ingestion of solid waste material by animals (i.e. sea turtles or dolphins swallowing paper bags, balloons) or injury of animals due to solid waste (i.e. hooking or strangling of birds in discarded fishing line). The accumulation of trash on the bay bottom may degrade habitat.

The discharge of liquid domestic wastes or toxic liquid materials, including fuel, that degrade water quality may affect reproductive success or lead to mortality.

Construction or demolition activity or watercraft use may cause avoidance of the area, degradation or loss of habitat, or mortality.

Direct undesirable effects on seagrass beds may occur from watercraft groundings.

Boating activity may leave scars where propellers scour the bottom, or may cause sufficient water movement to expose seagrass rhizome/roots, which could weaken seagrass stability and benthic habitat.

Structures shade the bay bottom, kill seagrasses, and preclude regeneration.

Aquatic organisms may become dependent upon the structures through the intentional feeding of wildlife or by attracting wildlife through improper trash disposal or fish cleaning.

Noise may affect wildlife during construction and operation of structures and from motorized watercraft use. Noise may interrupt normal activity, cause alarm or flight responses, interfere with courtship, cause habitat avoidance and displacement, cause nest abandonment with decreasing reproductive success, or cause injury or mortality (IWL 1999).

Education programs would promote an understanding and appreciation of the fragile estuarine environment and the associated biological resources.

Each issue was evaluated using the procedures described in the “General Methodology” section. The analysis includes the review of relevant scientific literature and data collected from various surveys of fish (Ault 2001), avian species, and seagrass beds (e.g., Sargent *et al.* 1995; Mansfield and Foster 1995) within the bay. The intensities of effects on biological resources were determined using the criteria in Table 9.

## REGULATIONS AND POLICIES

Numerous laws, statutes, and regulations have been enacted to protect biological resources. These include the water quality laws and regulations mentioned previously, which are intended in part to protect aquatic life, as well as specific regulations for the protection of biological resources.

The National Park Service Organic Act, which directs parks to conserve wildlife unimpaired for future generations, is interpreted by the agency to mean native animal life should be protected and perpetuated as part of the park's natural ecosystem. Natural processes are relied on to control populations of native species to the greatest extent possible; the species are protected from harvest, harassment, or harm by human activities. The restoration of native species is also a high priority (National Park Service 2002).

Title 36 CFR provides authorization for closing areas and limiting public use to protect resources; providing public notice of closures or use limits; prohibiting the destruction, defacing, or disturbing of resources; and protecting fish and wildlife (36 CFR 1.5, 1.6, 1.10, 2.1-2.5).

The Marine Mammal Protection Act of 1972, most recently reauthorized in 1994, established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters. The term "take" is statutorily defined to mean "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture or kill any marine mammal." Harassment is defined under the 1994 amendments as any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal in the wild, or has the potential to disturb a marine mammal in the wild by causing disruption to behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering. Under the Marine Mammal Protection Act, the Secretary of Commerce is responsible for the conservation and management of pinnipeds and cetaceans. This authority has been delegated to the National Marine Fisheries Service. The Act allows incidental take for other than scientific research and commercial fisheries only after an involved public process.

The seagrass beds within the Biscayne National Park, including the Stiltsville area, are considered a special aquatic site. The Environmental Protection Agency identifies six categories of special aquatic sites in their Section 404 b(1) guidelines (*Federal Register* 1980): sanctuaries and refuges, wetlands, mudflats, vegetated shallows, coral reefs, and riffle and pool complexes. These special aquatic sites are subject to provisions of the Clean Water Act. The seagrass beds within the Stiltsville area are classified as a vegetated shallow affording special protection under the Clean Water Act and falling under the U.S. Army Corps of Engineers jurisdiction.

Section 404 of the Clean Water Act establishes a requirement to obtain authorization or a permit prior to any activity that involves any discharge of dredged or fill material into "Waters of the United States." Waters of the United States include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers regulates and issues authorization or permits for such activities. Activities that require such authorization or a permit include placing fill or riprap, grading, mechanized land clearing, dredging, excavation and leveling. Any activity that results in the deposit of dredge or fill material within the "Ordinary High Water Mark" of waters of the United States usually requires a permit, even if the area is dry at the time the activity takes place.

Under Section 10 of the Rivers and Harbors Act of 1899, the construction of structures in, over, or under, excavation of material from, or deposition of material into “navigable waters” are regulated by the U.S. Army Corps of Engineers. Navigable waters of the U.S. are defined as those waters subject to the ebb and flow of the tide shoreward to the mean high water mark or those that are currently used, have been used in the past, or may be susceptible to use to transport interstate or foreign commerce. A letter of permission or permit is required from the U.S. Army Corps of Engineers prior to any work being completed within navigable water.

The National Park Service will consult with the Corps of Engineers if an action is to be taken in the future to replace structural pilings within the Stiltsville area and, if necessary, permits will be sought in compliance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899.

Seagrasses are also protected by Chapter 373.414, Florida Statutes. This law regulates dredge and fill activities in waters of the state. Any unpermitted activity that causes siltation of seagrass beds is considered unauthorized fill, while propeller scarring and blowouts are considered unauthorized dredging. Fines are levied according to the degree of undesirable effects incurred.

Seagrasses are also protected under Title 16, Chapter 1, Subchapter 111-B, Section 19jj of the Code of Federal Regulations. This regulation states that “any person who destroys, causes the loss of, or injures any park system resource is liable to the United States for response costs and damages resulting from such destruction, loss, or injury.” In addition, “any instrumentality, including but not limited to a vessel, vehicle, aircraft, or other equipment that destroys, causes the loss of, or injures any park system resource or any marine or aquatic park resource shall be liable in rem to the United States for response costs and damages resulting from such destruction, loss, or injury to the same extent as a person is liable under Subsection A of this section.” Under this regulation, any deleterious effects to seagrasses caused by groundings, blowouts, and propeller scarring can result in considerable fines to cover the costs of restoration.

## **IMPACTS OF ALTERNATIVE A (MANAGED BY A NON-PROFIT ORGANIZATION)**

The effects of Alternative A are evaluated against the no action Alternative D, which proposes the permanent removal of all seven structures from Biscayne Bay; therefore the intensity of impacts of Alternative A are compared to all existing natural and man-made components of this land/seascape, with the exception of the structures and visible activities associated with Stiltsville. Effects to biological resources may occur 1) during construction activities including scheduled renovations and routine maintenance, and 2) during day-to-day operations.

Noise effects associated with Alternative A would result from routine daily activities and during construction and renovation activities. Construction noise may temporarily disturb wildlife in the Stiltsville vicinity during the construction period (including routine maintenance activities). There are no absolute standards of short-term noise effects for potentially noise-sensitive species. Typically, the noise at 15 meters (50 feet) from a construction site does not exceed an equivalent sound level of 90 decibels (dB) (U.S. Environmental Protection Agency 1974). Most of the noise and human activity would be caused by the use of heavy machinery and construction equipment. If construction occurs during the winter months, wintering shorebirds may be disturbed. Construction activities could also disturb foraging or breeding activities of birds, sea turtles, fish and other wildlife in the area. The combination of increased noise levels and human activity would likely displace some birds, including eagles or other listed bird species that may be foraging in the area. Some wildlife may be temporarily displaced by the noise and activity during construction and then return to the area when construction

was complete. Other more sensitive species may permanently abandon the area, while others may become accustomed to the increased noise and human presence.

Adverse, direct effects to biological resources during renovation and construction of this alternative would be negligible to minor, local, and short-term, similar to impacts associated with the demolition of structures under the no action alternative. This would be limited by restricting construction activities to specific time periods and specific methods that would minimize disturbances and through monitoring resources while extensive construction or maintenance activities are underway.

Alternative A would include management of the Stiltsville structures designed to minimize the discharge of wastes (i.e., trash and debris). Currently there are state and federal laws that govern the discharge and disposal of hazardous substances; however, because of the unique and fragile setting of Stiltsville, everyday wastes can affect and disrupt aquatic organisms and their habitats. Potential effects include: discarded cooking oils, petroleum products, and human waste into Biscayne Bay could adversely affect health and survival of plankton and other aquatic organisms living near the structures or add nutrients to the water that will increase algae growth; debris ingested by wildlife could temporarily impair foraging or result in extraordinary stress (e.g., fish and birds swallowing fish hooks or paper goods, slowing normal body functions such as digestion) or permanently affect the animal (sea turtle ingesting plastic items resulting in a blockage in the respiratory system). These effects could eliminate organisms in the various trophic levels of the food chain or simply cause organisms to avoid the area, which may potentially interfere with foraging or breeding activities. Under Alternative A, the non-profit organization would implement and enforce procedures on all structure operators for the handling and removal of trash, debris, and potentially harmful substances, while the presence of National Park Service staff and educational programs would encourage observance of procedures by occupants. Accidental discharges may still occur. Under these conditions, the introduction of substances from the structures into the surrounding environment would produce short- and long-term adverse effects that would be localized and would range from negligible to minor in intensity, depending upon the amount of waste release and its toxicity to organisms.

Under this alternative, guidelines pertaining to the use of fishing line including, but not limited to, fishing line made of monofilament, fluorocarbon, and synthetic braided line, would be developed and implemented, thus reducing the likelihood of entanglements. Entanglements are a major cause of human-induced mortality on avian species (Murphy, pers. comm., 2002) as well as aquatic species. Effects would be negligible to minor and would be short- or long-term, depending on the effect on the animal.

Access channels for the structures would be clearly marked, with access being limited depending on the determined capacity of each individual structure. Those operating boats under agreement with the Stiltsville organization, such as education tour operators, researchers, or lodging operators, would be given detailed instructions or would need to demonstrate proficiency in piloting watercraft to the structures in order to minimize adverse effects to the adjacent submerged habitats of Stiltsville. Less skilled individuals may access structures designated as campsite lodging units or as an interpretive center. These uses would be in structures with easy access, minimizing adverse effects from less skilled operators. Additionally, National Park Service staff and educational programs would increase visitor awareness of the sensitive nature of the surrounding marine environment.

Continued presence of unskilled operators in the area would likely result in undesirable effects on seagrass beds. Exposed area may erode due to the strong tidal movements in the shoals, resulting in the degradation of the sediment substrate that the seagrass require for survival. These eroded areas may expand and continue to become degraded and become a permanent bare bottom community.

These bare areas also provide habitat and conditions for brown and green algal species such as *Dictyota* and *Caulerpa* to colonize and compete with the seagrasses for space (1995). *Caulerpa verticillata*, once confined to the nutrient-rich waters of mangrove swamps, has become invasive in the area due to elevated levels of nitrogen. This species of *Caulerpa* colonizes bare bottom areas and spreads outward from these new areas, eliminating all flora and fauna in its path and creating expanses of monocultures. *Caulerpa verticillata* has not been identified in the Stiltsville area to date, but it is common in the inshore habitats in Biscayne Bay. Because seagrass communities do not recover quickly from disturbance and an increase in the amount of bare areas increases the potential for establishment of invasive algal species, the long-term adverse impacts of boating activity associated with use of the structures would be minor to moderate.

The continued presence of unskilled operators also perpetuates the potential for direct physical impacts on wildlife species, which may result in loss of individual animals from collisions with boats and propellers. Alternative A would have localized, long-term, minor, adverse effects on aquatic organisms due to physical harm to individuals and to destruction of habitat. Because suitable habitat exists throughout the shoals and within Biscayne National Park, wildlife species populations would probably not be affected by continued watercraft use.

Under Alternative A methods would continue to be used to discourage the use of the structures by avian species. However, the structures themselves provide attractive perching areas for predator/prey interactions (i.e., *Buteo* spp. and *Accipiter* spp. intercepting migratory species Chuck-will's-widow - *Caprimulgus carolinensis*) (personal conversation with Biscayne National Park staff). The continued use of methods to dissuade the use of the structures by birds of prey would result in long-term, negligible, adverse effects.

The presence of boats and boat emissions around the structures would produce short-term, negligible to minor, adverse effects on aquatic organisms present in areas around the structures. Studies have demonstrated that outboard (two-cycle) engine exhaust with their discharge of hydrocarbons can affect the developmental phases of aquatic organisms. Laboratory experiments showed that the exhaust of two-cycle engines can adversely affect fish by causing morphological disturbances, disrupting cellular and subcellular processes, disrupting physiological functions. They have also shown that watercraft exhaust may contain substances detrimental to fish during early life stages (Tjarnlund *et al.* 1995 and 1996). The presence of boats and the noise generated may alter wildlife behavior, including avoidance and displacement of animals from foraging and nesting areas and decreased reproductive success (IWL 1999). Controls and capacities set for each structure would limit the number of boats accessing and docked at the structures to no more than 5 to 10 boats at one time. These capacities (which may be adjusted following improved monitoring of effects), speed limits, and programs to teach the public about the fragile nature of the estuarine environment would minimize the adverse effects on biological resources in the Stiltsville area. The capacities along with the large flushing action of tides over the shoals would also minimize effects of watercraft emissions on aquatic organisms in the area. The adverse effects on biological resources of continued boating access to structures would be long-term and negligible to minor.

### **Cumulative Effects**

Wildlife within Biscayne Bay is adversely affected by a loss of habitat within the bay as a result of degradation of water quality and recreational and commercial boating activity. The continued degradation of water quality from stormwater and agricultural runoff and sewage releases into the bay negatively impacts seagrass beds that provide foraging and breeding habitat for many aquatic and



avian species. The increasing popularity of watercraft use in the bay has also resulted in a loss of habitat by physically damaging wildlife habitat and eroding the substrate from accidental groundings and propeller scarring. Increased urbanization in southern Florida has resulted in an increase in recreational activity within the bay, which has increased the potential for adverse effects on wildlife from trash, such as fishing lines and plastics that may be ingested by wildlife, as well as physical harm from collisions with boats or propellers. These events have cumulatively resulted in minor to moderate, adverse effects on biological resources in the bay area. The adverse effects associated with Alternative A would contribute negligibly to these cumulative effects.

## **Conclusion**

Effects to biological resources during routine operations associated with Alternative A would vary depending on the individual disturbance. The adverse effects to biological resources from associated use of the structures, including continued boating activity to access structures and disposal of trash, would be long-term, localized, and negligible to moderate. Adverse effects associated with construction noise that may displace wildlife or disrupt behavior would be localized and temporary and negligible to minor. Adverse cumulative effects from implementation of Alternative A on biological resources would be negligible.

Alternative A would not produce major adverse effects on biological resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of biological resources or values as a result of the implementation of Alternative A.

## **IMPACTS OF ALTERNATIVE B (NATIONAL PARK SERVICE MANAGEMENT FOR PUBLIC USE)**

The effects of Alternative B would be similar to those of Alternative A. The National Park Service would designate a mix of uses for the structures and would set standards and controls for rehabilitation and use of the structures similar to those of Alternative A. Continued use of structures, watercraft access, and construction activities would likely displace animals or disrupt animal behavior and injure individuals to a similar extent. Because the area of affect is small in comparison to the bay environment and suitable habitat exists adjacent to the area, the adverse effects to wildlife species would be localized, short- and long-term, and range from negligible to minor. Effects on seagrass beds from continued watercraft access to the sites would result in minor to moderate adverse effects due to the fragile nature of the beds and their inability to recover quickly from disturbance.

## **Cumulative Effects**

Cumulative effects associated with implementation of this alternative would be the similar to those described for Alternative A.

## **Conclusion**

The adverse effects to biological resources under Alternative B from associated use of the structures, including continued boating activity to access structures and disposal of trash, would be long-term,

localized, and negligible to moderate. Adverse effects associated with construction noise that may displace wildlife or disrupt behavior would be localized, temporary, and negligible to minor. Revegetation of previously disturbed areas with seagrass would have long-term minor beneficial effects on biological resources. Adverse cumulative effects from implementation of Alternative B on biological resources would be negligible.

Alternative B would not produce major adverse effects on biological resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of biological resources or values as a result of the implementation of Alternative B.

### **IMPACTS OF ALTERNATIVE C (COMPETITIVE LEASING FOR PUBLIC USE)**

To the extent that the competitive leasing process resulted in a range of uses and a level of visitation similar to Alternative A, the effects of Alternative C would be similar to those from Alternative A. The National Park Service could award competitive leases with the intent of designating a mix of uses for the structures similar to Alternative A and would set standards and controls for rehabilitation and use of the structures similar to those of Alternative A.

To the extent that leases would be written for private uses, there would be less control over boater behavior. Given the increased presence of National Park Service staff, impacts would not likely be substantially greater than under Alternative A.

#### **Cumulative Effects**

Cumulative effects of implementing this alternative would be similar to those described for Alternative A.

#### **Conclusion**

Effects to biological resources during routine operations associated with Alternative C would vary depending on the individual disturbance. Compared to the no action alternative, the adverse effects to biological resources from associated use of the structures, including continued boating activity to access structures and disposal of trash, under Alternative C would be long-term, localized and negligible to moderate. Adverse effects associated with construction noise that may displace wildlife or disrupt behavior would be localized and temporary and negligible to minor. Adverse cumulative effects from implementation of Alternative C on biological resources would be negligible.

Alternative C would not produce major adverse effects on biological resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of biological resources or values as a result of the implementation of Alternative C.

## **EFFECTS OF ALTERNATIVE D (REMOVAL OF STRUCTURES)**

Effects to biological resources may occur during the demolition and removal of the structures. These activities would produce negligible to minor, short-term, adverse effects to biological resources. Trash, debris, or hazardous substances may be released during demolition and construction. Equipment such as barges may adversely affect seagrass beds and aquatic organisms if not anchored properly or if used in water that is too shallow. Because of the remote location of the structures, all contractor employees, construction supplies, and heavy equipment would depend on various watercraft and barges. The temporary anchoring of the general watercraft may be able to use the existing docking facilities on the structures. However, larger barges would require anchorage in the existing channels, if possible, or adjacent to the appropriate structure. To further protect biological resources in the area, additional mitigation would be employed that would involve, but not be limited to, the proper disposal of wastes, approved turbidity and erosion control devices, the use of spill prevention devices, and a pre-construction briefing between National Park Service staff and contractors.

Demolition noise may disturb wildlife in the Stiltsville vicinity. There are no absolute standards of short-term noise effects for potentially noise-sensitive species. Typically, the noise at 15 meters (50 feet) from a construction site does not exceed an equivalent sound level of 90 decibels (dB) (U.S. Environmental Protection Agency 1974). Most of the noise and human activity would be caused by the use of heavy machinery and demolition equipment. If the work occurs during the winter months, wintering shorebirds may be disturbed. Demolition activities could also disturb foraging or breeding activities of birds, sea turtles, fish and other wildlife in the area. The combination of increased noise levels and human activity would likely displace some birds, including eagles or other listed bird species that may be foraging in the area. Some wildlife may be temporarily displaced by the noise and activity during removal activity and then return to the area after its completion. More sensitive species may permanently abandon the area, while others may become accustomed to the increased noise and human presence.

Wildlife attracted to the existing structures that have adapted their behaviors and use the structures for shelter, foraging, roosting, and resting, whether as a long-term adaptation or an opportunistic advantage, would incur a long-term negligible adverse effect following removal of the structures. Wildlife species would have to forage and seek refuge in the Safety Valve vicinity without the advantageous use of the existing structures. The high-quality ecosystem found in the Stiltsville area and Biscayne Bay would readily accommodate these species.

Completion of the demolition and removal activities would eliminate direct and indirect biological effects attributed to the presence and use of the structures. Long-term effects would include a reduction in boating related impacts to water quality and the seagrass beds in the Stiltsville vicinity, resulting from substantial reductions in boating activity in the shoals. Implementation of this alternative would reduce physical destruction of habitat such as seagrass beds from grounding and propeller scarring. Reduction in the number of watercraft in the area would also reduce the amount of pollution entering the area from engine emissions. This reduction would be at a rate proportional to the reduction in watercraft. With removal of the structures, the surrounding waters would benefit from a reduction in debris, trash, fishing line, and other potentially harmful substances associated with the historic use of the structures. The long-term, beneficial effects to wildlife species from improved water quality and habitat would be negligible to minor compared to current conditions. Reduced watercraft activity would have long-term, minor to moderate benefits to seagrass beds in the area.

Over time, the Safety Valve shoals would return to natural conditions. Wildlife habitat such as seagrass beds would be restored naturally and through revegetation programs. The return of natural

bay bottom communities in the area occupied by the structures would produce long-term, minor to moderate, beneficial effects. The resulting restored habitat would augment the high quality habitat that presently exists throughout the Safety Valve shoals area.

### **Cumulative Effects**

The no action alternative would result in a reduction in boat traffic in the shoals and the associated effects on wildlife habitat and the substrate. Removal of the structures would facilitate benthic habitat recovery in an area that provides foraging and breeding habitat for many aquatic and avian species. Local, state, and federal entities have implemented programs and plans to protect and restore Biscayne Bay. The south Florida Ecosystem Restoration Task Force has implemented a plan to restore water flows to the bay by restoring natural hydrology upstream. The Surface Water Improvement and Management Plan is directed at improving water quality and quantity as well as restoring and preserving natural bay environments. These efforts to improve conditions of the bay provide minor to moderate benefits to the biological resources the bay supports. The actions associated with this alternative would negligibly contribute to the efforts of these other projects.

### **Conclusion**

Removing the structures at Stiltsville would be beneficial to the biological resources in the direct vicinity of Stiltsville and to Biscayne Bay as a result of improved water quality and habitat. Demolition activity that may displace and disturb wildlife species and disturb habitat would result in negligible to minor, localized, and temporary adverse effects on biological resources. The elimination of the structures and the impacts associated with their use would have long-term, beneficial, negligible to moderate effects on biological resources resulting from restored habitat and improved water quality in the Stiltsville area. The beneficial effects of this action negligibly supports the actions implemented by other agencies to restore and protect Biscayne Bay.

Alternative D would not produce major adverse effects on biological resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of biological resources or values as a result of the implementation of Alternative D.

## **ENDANGERED OR THREATENED SPECIES**

### **METHODOLOGY**

The effects of the alternatives on endangered or threatened species were determined by defining the issues of concern identified during project planning and scoping:

Watercraft use and construction activity may lead to a reduction of seagrass beds that provide habitat for many special concern species.

Increased motorized watercraft traffic could increase the potential injury or death to sea turtles or manatees from collisions with boats.

Brown pelican, bald eagle, and peregrine falcon are known to forage and roost in the area around Stiltsville and may be affected by spills of hazardous materials, sewage releases, discarded fishing line, and bird deterrent devices.

Ingestion of trash originating from Stiltsville may lead to species loss.

The public needs better education on endangered or threatened species and the importance of their habitats, including seagrass beds.

Each of the issues was evaluated using the procedures described in the “General Methodology” section. Park staff maintains lists of the endangered or threatened species within Biscayne National Park, based on casual observations, informal surveys, and information provided by scientists working on projects within the park. Resident and migratory birds in the park are surveyed yearly during the Christmas bird counts conducted by volunteers from the Florida Audubon Society. To date, no surveys of the flora or fauna surrounding Stiltsville have been conducted, with the exception of an informal dive survey recently carried out by park staff (Patterson 2000). The intensities of effects on endangered or threatened species were determined using the criteria in Table 9.

### **REGULATIONS AND POLICIES**

The Endangered Species Act of 1973 provides strict legal protection for endangered and threatened species, as well as those special concern species that may be in jeopardy of extinction, and for which special protection under federal and state law is afforded. In Florida, plants and animals are protected by both state and federal environmental agencies. The state lists of animals are jurisdictionally maintained by the Florida Fish and Wildlife Conservation Commission (FFWCC) and are found in Chapters 39-27.003, 39-27.004, and 39-27.005, FAC. The federal list of plants and animals is published in 50 CFR 17.11-12, and is administered by the U.S. Fish and Wildlife Service (USFWS).

### **IMPACTS OF ALTERNATIVE A (MANAGED BY A NON-PROFIT ORGANIZATION)**

The effects of Alternative A are evaluated against the no action Alternative D, which proposes the permanent removal of all seven structures from Biscayne Bay. Therefore, the intensity of impacts of Alternative A are compared to all existing natural and man-made components of this land/seascape, with the exception of the structures and visible activities associated with Stiltsville.

The implementation of Alternative A would result in a controlled use of the Stiltsville structures, and therefore less impact than is currently occurring on the habitat of listed species in the area.

The Stiltsville organization would set standards and best management practices for handling waste material and hazardous substances to minimize their release into the waters surrounding the structures. The continued presence of materials that would be harmful to endangered or threatened aquatic or avian species and the potential releases of these would result in adverse, short-term and localized effects. Effects would be of negligible intensity.

Requirements for slower boat watercraft speeds and for trained boat pilots for some public uses would reduce the likelihood of direct boat encounters with individuals of any species. Private use of a structure and uses such as campsites could involve access by operators who may lack adequate knowledge about the Stiltsville area. This may slightly increase the possibility of a boat injuring a manatee or turtle. However, with no documented incidents under prior private use and with increased education and staff presence at Stiltsville, this would result in negligible adverse effects. Access would be restricted to marked channels, and boating in very shallow areas may be prohibited to protect the shoals at low tide. Therefore, the continued presence of boats accessing the structures would result in adverse, short-term, localized, negligible effects.

If the non-profit organization developed an interpretive center, it would provide displays to educate visitors on the importance of the seagrass beds to the endangered species in the area. A heightened awareness of the potential for human impact on the environment may result in fewer impacts.

Several of the structures would likely use solar power, and the non-profit organization would take steps to prevent roosting birds from fouling the photovoltaic cells. This may reduce the number of roosting birds that fall prey to the raptor species that forage in the area. These prey species would be displaced to other areas in the bay, with no net loss of prey available to the bald eagle or the peregrine falcon. The adverse effects of Alternative A on these species would be long-term and negligible. The anti-fouling devices would be designed to avoid harming the birds.

The presence of the structures, access by watercraft, and construction activity may adversely affect seagrass beds in the Stiltsville area. The shading produced by the structures inhibits growth of seagrass. Debris from construction and access to the area by watercraft and construction vessels may disturb seagrass beds and their substrate. Adverse effects to habitat from construction activity would be reduced or avoided using best management practices. These activities may result in some loss of habitat used for foraging by many of the federal- and state-listed species. Nearly half (72,000 acres) of the seagrass beds in Miami-Dade County occur in Biscayne National Park, and the overall condition of the beds is considered to be relatively good. Because suitable habitat exists within and adjacent to Stiltsville, the loss of habitat resulting from implementation of Alternative A would have long-term, localized, negligible effects on listed species that depend upon seagrass habitat.

### **Cumulative Effects**

The destruction of habitat by pollution and by commercial and recreational boating activity in the bay has resulted in degradation of water quality and over 8,000 acres of seagrass habitat being moderately to severely scarred (Sargent *et al.* 1995). Implementation of Alternative A would contribute negligibly to the cumulative effects of other activities that are affecting the habitat of federal- and state-listed species within Biscayne Bay.

The educational displays proposed for the visitor center, together with the boat watercraft tours, classroom activities, and other educational efforts expended by the park staff, would have negligible, long-term, beneficial effects on the endangered or threatened species' populations in Biscayne Bay. When people realize the cumulative impacts of their actions, they generally are more responsible with respect to the preservation of the threatened and endangered species and their environment.

### **Conclusion**

Implementation of Alternative A would result in continued use of the structures, access by watercraft, and construction activity that would cause unwanted effects on habitat in the Stiltsville area. With best management practices and increased National Park Service presence in the area to enforce watercraft regulations, the short- and long-term adverse effects on endangered or threatened species and sensitive habitats would be negligible. Educating the public about the consequences of their activities on protected wildlife and their habitat would likely reduce impacts. The implementation of Alternative A would have long-term, negligible, adverse, cumulative impacts on the preservation of species such as the manatee, sea turtles, and other endangered or threatened species and their habitats.

Alternative A would not produce major adverse impacts on threatened or endangered species whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of endangered or threatened species as a result of the implementation of Alternative A.

### **IMPACTS OF ALTERNATIVE B (NATIONAL PARK SERVICE MANAGEMENT FOR PUBLIC USE)**

The mix and intensity of uses at Stiltsville would be similar to Alternative A. The National Park Service would implement the same management and regulatory practices as would the Stiltsville non-profit organization. Therefore, the impacts on threatened or endangered species of this alternative would be similar to Alternative A.

### **Cumulative Effects**

The cumulative effects would be similar to those described for Alternative A.

### **Conclusion**

Continued use of the structures, access by watercraft, and construction activity would cause unwanted effects on habitat in the Stiltsville area with implementation of Alternative B. The short- and long-term adverse effects on endangered or threatened species and sensitive habitats would be negligible with implementation of best management practices and with increased National Park Service presence in the area. Educating the public about the consequences of their activities on protected wildlife and their habitat would likely reduce impacts. The implementation of Alternative B would have long-term, negligible, beneficial, cumulative impacts on the preservation of species such as the manatee, sea turtles, and other endangered or threatened species, and their habitats.

Alternative B would not produce major adverse impacts on threatened or endangered species whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the

park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of threatened or endangered species as a result of the implementation of Alternative B.

### **IMPACTS OF ALTERNATIVE C (COMPETITIVE LEASING FOR PUBLIC USE)**

To the extent that the competitive leasing process resulted in a range of uses and a level of visitation similar to Alternative A, the mix and intensity of uses would be similar to Alternative A. Therefore, the impacts on threatened or endangered species of this alternative would be similar to Alternative A.

#### **Cumulative Effects**

The cumulative effects would be similar to those described for Alternative A.

#### **Conclusion**

Continued use of the structures, access by watercraft, and construction activity would cause unwanted effects on habitat in the Stiltsville area under Alternative C. The implementation and enforcement of the regulations and best management practices would reduce the potential for negative effects to the protected species. Alternative C would cause negligible, short- and long-term, adverse effects on federal- and state-listed species and sensitive habitats in the Stiltsville vicinity. Educating the public about the consequences of their activities on protected wildlife and their habitat would likely reduce impacts in the future. The implementation of Alternative C would have long-term, negligible cumulative beneficial impacts on the preservation of species such as the manatee, sea turtles, and other endangered or threatened species and their habitats.

Alternative C would not produce major adverse impacts on threatened or endangered species or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of endangered or threatened species as a result of the implementation of Alternative C.

### **IMPACTS OF ALTERNATIVE D (REMOVAL OF STRUCTURES)**

The removal of the structures would result in limited watercraft traffic within the shoals, primarily associated with flats fishing, reducing the potential for impacts to the habitat for the endangered and threatened species. As stated in previous sections, inexperienced or careless operators of motorized watercraft in the shallow areas can cause impacts to the habitat for endangered and threatened species by impacting the seagrasses and reducing the nursery habitat for prey species. The potential for physical impacts to manatees and sea turtles by collision with boats navigating in the shallow water would also be reduced.

Trash, discarded fishing line and hooks, and other threats to wildlife would be reduced with the structures removed because there would be less human activity in the shoals area.

With the removal of the structures, the seagrass beds may recover. In the long-term, this would provide additional habitat to that currently present throughout the Safety Valve shoals area.



The overall localized, long-term, beneficial effects resulting from implementation of this alternative would be negligible.

Adverse direct effects to endangered or threatened species during demolition and removal activities would be localized, of negligible to minor intensity, and short-term. This would be limited with implementation of best management practices and a detailed demolition and removal plan. Controls could include restricting construction activities to specific time periods and specific methods that would minimize disturbances and through monitoring resources while demolition and removal activities were underway.

### **Cumulative Effects**

The cumulative effects of the removal of the structures on the local environment would be beneficial. Efforts undertaken by local, state, and federal agencies to improve water quality in Biscayne Bay, such as the south Florida Ecosystem Restoration Program and the Surface Water Improvement and Management Plan, indirectly benefit federal- and state-listed species and critical habitat. Reducing nutrient loading and sewage into the bay would help improve water clarity and consequently listed species that forage and breed in the bay. Efforts to rehabilitate eroded areas with seagrasses would also improve habitat by providing continuous, quality habitat for foraging by listed species. The removal of structures and reduced watercraft usage of the Stiltsville area under Alternative D would contribute to these beneficial effects. Because the area involved in this plan is small in comparison to the bay itself, the contribution of beneficial effect would be considered negligible. The combination of all efforts, however, would result in a minor beneficial effect on federal- and state-listed species and critical habitat within the bay.

### **Conclusion**

The long- and short-term effects of the no action alternative on endangered or threatened species would be localized and negligible. The endangered or threatened species would include preservation and enhancement of their habitat and the habitat for their primary forage materials. The cumulative effects of this plan and others to improve water quality and clarity in Biscayne Bay would result in a minor beneficial effect on federal- and state-listed species.

Alternative D would not produce major adverse impacts on threatened or endangered species or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of endangered or threatened species as a result of the implementation of Alternative D.

## ECOLOGICALLY CRITICAL AREAS

### METHODOLOGY

Through internal and public scoping processes, the following issues were identified regarding ecologically critical areas:

Construction activities may result in increased disturbance of the bay floor, increasing suspended sediments in the water and decreasing water clarity in essential fish habitat used for foraging.

Toxic chemicals stored and used on the structures could be spilled or dumped into the water. Examples include cleaners, paints, varnishes, and wood-treating chemicals.

Waste products such household trash, bilge water, wash and rinse waters, and human sewage could be inappropriately stored and disposed.

Seagrass beds, which are representative of essential fish habitat or habitat of concern within the area, may be weakened in various ways from activities associated with the alternatives. Direct deleterious effects on seagrass beds may occur from construction activity, watercraft groundings, or propellers which scour the bottom. The structures themselves shade the bay bottom and preclude regeneration of seagrasses.

Public attitudes and behavior needs to change regarding estuarine environments, including ecologically critical areas around Stiltsville and throughout the bay. Education received at Stiltsville could be an important element of such change.

Each issue was evaluated using the procedures described in the “General Methodology” section. Issues pertaining to ecologically critical areas were evaluated using information obtained through best professional judgment of park staff and experts in the field. In addition, relevant scientific literature and data was used to assess impacts. In particular, fish surveys conducted in the Biscayne Bay by various scientists from the National Oceanic and Atmospheric Administration and University of Miami Rosensteel School of Marine and Atmospheric Science were used in this evaluation. The intensities of effects on ecologically critical areas were determined using the criteria in Table 9.

### REGULATIONS AND POLICIES

The National Marine Fisheries Service, a division of the National Oceanic and Atmospheric Administration, provides protection for the habitat around Stiltsville as essential to the life cycle of numerous endangered and commercially important species. The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires all federal agencies to consult with National Marine Fisheries Service on all actions or proposed actions permitted, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat. Essential Fish Habitat is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The National Park Service will consult with the National Marine Fisheries Service before any action is undertaken that may affect essential fish habitat.

## **IMPACTS OF ALTERNATIVE A (MANAGED BY A NON-PROFIT ORGANIZATION)**

The effects of Alternative A are evaluated against the no action Alternative D, which proposes the permanent removal of all seven structures from Biscayne Bay; therefore the intensity of impacts of Alternative A are compared to all existing natural and man-made components of this land/seascape, with the exception of the structures and visible activities associated with Stiltsville.

The two primary potential impact concerns that could result if this preferred alternative were implemented are the effects of the construction activity (initial renovation efforts and subsequent maintenance efforts) and the daily operation of Stiltsville (including potential boat groundings and resultant effects; and trash, debris, and hazardous substance discharge into the bay). The effects analyzed include those to the aquatic species listed above and to their respective prey and habitats.

The primary effect of implementing Alternative A on the identified ecologically critical areas in Biscayne National Park would be to the seagrass beds. The seagrass habitats provide a vital function in Biscayne Bay (see “Biological Resources” section).

The preferred alternative would require significant renovations. Because of the remote location of the structures, all contractor employees, construction supplies, and heavy equipment would rely on various watercraft and barges. The installation of new pilings on the structures would require watercraft and barges to be directly adjacent to the work area. The temporary anchoring of these craft adjacent to the stilt-structures would have direct effects on the submerged aquatic vegetation (i.e., seagrass beds) under the anchored vessels and potentially affect seagrass beds further removed from the work area. To protect this ecologically critical habitat, construction activities would involve the use of approved turbidity and erosion control devices, the use of spill prevention devices, and a pre-construction briefing between National Park Service staff and contractors. Construction and renovation activity would result in indirect, negligible to minor, short-term localized impacts to the adjacent benthic habitats that represent ecologically critical areas with implementation of best management practices, similar to effects associated with the demolition of structures under the no action alternative.

The preferred alternative would include regulations and controlled access to structures to reduce the effects on the surrounding submerged habitats. Access to the structures would be limited based on a determined capacity. Guidelines established by National Park Service personnel to enforce regulations would reduce inadvertent adverse effects, such as propeller scars and groundings, on the adjacent submerged habitats of Stiltsville. However, some groundings and resultant effects on benthic habitat would occur from watercraft access to structures. Because seagrass beds, which represent a significant aspect of ecologically critical areas in the Stiltsville area, do not recover rapidly from disturbance, the adverse effects of motorized watercraft use in Stiltsville to access structures would be localized, long-term, and minor to moderate compared to the no action alternative.

Guidelines and regulations that direct the appropriate collection, treatment and disposal of trash and sewage would be established under Alternative A. In addition, an educational program would heighten public awareness of the fragility of the estuarine environment and the effects of human presence in the environment. A decrease, compared to historic uses, in the amount of discarded trash, debris, hazardous materials, and fishing tackle items generated from the structures into the bay would be expected. These actions associated with the preferred alternative would result in improved water quality and decreased direct physical contact with benthic habitats, benefiting ecologically critical areas. However, the long-term adverse effects of waste being discarded into the environment would be minor.

### **Cumulative Effects**

Increased urbanization along Biscayne Bay and agricultural use in southern Florida have resulted in increased recreation use of the bay and increased water quality degradation related to agricultural and stormwater runoff. Degraded water quality and increased boating activity have severely impacted seagrass beds and benthic habitat that represent ecologically critical areas in the bay. The destruction of habitat from recreational boating activity in the bay has resulted in over 8,000 acres of seagrass habitat being moderately to severely scarred (Sargent *et al.* 1995). Increased turbidity resulting from increased nutrient loading from agricultural areas and sewage has degraded visibility in habitats used by numerous fish species and manatees for forage. The contribution of all of these activities has moderately impacted ecologically critical areas within the bay. The activities associated with Alternative A that adversely affect ecologically critical areas within the Stiltsville area are negligible in comparison to other activities occurring that affect Biscayne Bay and threaten essential fish habitat and habitat of concern.

### **Conclusion**

With implementation of best management practices, construction and renovation activity would result in indirect negligible to minor short-term impacts to ecologically critical habitats, similar to effects associated with the demolition of structures under the no action alternative.

Continued use of boats to access structures would negatively impact seagrass beds and substrates that represent essential fish habitat in the Stiltsville area. This disturbance to essential habitat would represent a localized, long-term, minor to moderate, adverse effect to ecologically critical areas. The long-term adverse effects on ecologically critical areas from discarding of wastes into the environment would be minor. Educating the public about the consequences of their activities on fragile estuarine ecosystems that includes essential fish habitat and habitat of concern could reduce adverse effects in the future.

Implementation of Alternative A would contribute negligibly to the adverse cumulative effects on ecologically critical areas in Biscayne Bay.

Alternative A would not produce major adverse effects on ecologically critical areas or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of ecologically critical areas or values as a result of the implementation of Alternative A.

### **IMPACTS OF ALTERNATIVE B (NATIONAL PARK SERVICE MANAGEMENT FOR PUBLIC USE)**

Continued use of the structures, watercraft access to the structures, construction and renovation activities, and public education programs would occur under Alternative B as described above for Alternative A. The impacts of implementing this alternative on ecologically critical habitats would therefore be similar to those described for Alternative A.

## **Cumulative Effects**

Cumulative effects would be similar to Alternative A.

## **Conclusion**

Construction and renovation activity would result in indirect, localized, negligible to minor, short-term impacts to ecologically critical habitats. Continued use of the structures and associated watercraft activity would negatively impact seagrass beds and substrates that represent essential fish habitat in the Stiltsville area, resulting in a localized, long-term, minor to moderate, adverse effect to these ecologically critical areas. Educating the public about the consequences of their activities on fragile estuarine ecosystems that includes essential fish habitat and habitat of concern could reduce adverse effects in the future.

Implementation of Alternative B would contribute negligibly to the adverse cumulative effects on ecologically critical areas in Biscayne Bay.

Alternative B would not produce major adverse effects on ecologically critical areas whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of ecologically critical areas as a result of the implementation of Alternative B.

## **IMPACTS OF ALTERNATIVE C (COMPETITIVE LEASING FOR PUBLIC USE)**

The effects on ecologically critical areas within Stiltsville resulting from implementation of Alternative C would be similar to those discussed for Alternative A. Construction and renovation activities with implementation of best management practices would result in negligible to minor, short-term, adverse effects on essential fish habitat or habitats of concern.

Alternative C would continue use of the structures, regulating the types of uses and carrying capacity of the structures. A permanent National Park Service presence in the area could lessen the impacts to ecologically critical areas through enforcement of regulations. Implementation of this alternative would reduce watercraft activity in the Stiltsville area and the potential for accidental groundings and propeller effects compared to Alternatives A and B. A competitive leasing program may result in structures being leased by private entities, which may result in increased use of the structures during weekends and holidays. The use of the structures for private purposes may increase the potential for unskilled boat operators in the area. Overall the long-term, adverse impact on ecologically critical habitats, such as seagrass beds, due to continued use of these structures, would be minor to moderate.

## **Cumulative Effects**

Cumulative effects on the ecologically critical areas in Biscayne Bay from implementation of Alternative C would be similar to those discussed above for Alternative A.

## Conclusion

Construction and renovation activity would result in indirect, localized, negligible to minor, short-term impacts to ecologically critical habitats. Watercraft use of the area may decrease under this alternative. However, use of some of the structures by private entities would likely result in the presence of unskilled boat operators accessing the area and damaging seagrass beds and disturbing the substrate. This would result in a localized, long-term, minor to moderate, adverse effect to ecologically critical areas. Educating the public about the consequences of their activities on fragile estuarine ecosystems that includes essential fish habitat and habitat of concern could reduce adverse effects.

Implementation of Alternative C would contribute negligibly to the adverse cumulative effects on ecologically critical areas in Biscayne Bay.

Alternative C would not produce major adverse effects on ecologically critical areas or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of ecologically critical areas or values as a result of the implementation of Alternative C.

## IMPACTS OF ALTERNATIVE D (REMOVAL OF STRUCTURES)

Potential effects to ecologically critical areas, such as essential fish habitats, could occur during the demolition and removal activities of Alternative D. The concerns analyzed include effects to the aquatic species listed above and the effects to their respective prey items and habitats. The significance of the seagrass and submerged habitats present at Stiltsville is described in detail in the "Biological Resources" section.

Effects to ecologically critical areas may occur during the demolition activities proposed for Alternative D. Implementation of best management practices and a detailed demolition and removal plan would minimize the likelihood of unanticipated effects to ecologically critical areas. Short-term effects of the demolition and removal activities would include potential effects to the seagrasses due to watercraft groundings, the discharge of trash and other materials associated with the removal of the existing structures, the discharge of toxic and hazardous substances, and the potential release of petroleum substances from the watercraft and construction equipment used in the demolition and removal activities. With mitigation measures, the localized effects to the ecologically critical areas during the removal activities would be negligible to minor and short-term.

Long-term effects would include a reduction in watercraft-related impacts to the submerged habitats in the Stiltsville vicinity. Without the presence of the structures, watercraft activity would decline in the shoals, reducing the watercraft groundings attributed to past use and eliminating the pollutant discharges from watercraft accessing the structures. Watercraft groundings in the seagrasses would continue to be proportional to the number of watercraft using the navigational channel; however, these effects would be negligible compared to the historic submerged habitat effects that have occurred from the direct use of the structures. The reduction in watercraft activity on the shoals would have long-term, minor, beneficial effects on ecologically critical areas.

Over time, the Safety Valve shoals would return to natural conditions. Seagrass would be restored naturally. The resulting restored habitat would augment the high-quality habitat that presently exists throughout the Safety Valve shoals area.

## **Cumulative Effects**

The cumulative effects of the removal alternative would be beneficial in that the majority of the watercraft traffic through the Safety Valve area would be limited to the Biscayne Channel. With this reduction in traffic, the seagrass habitat, an essential fish habitat within the bay, would either regenerate over many years or be replanted, and degradation of water quality from boating emissions would be reduced. With the removal of the structures, there would be lower potential for the accidental release of trash, toxins, and waste. These factors would benefit ecologically critical habitats within Stiltsville and adjacent areas.

Activities undertaken by local, state, and federal agencies to improve water quality in Biscayne Bay, such as the south Florida Ecosystem Restoration Program and the Surface Water Improvement and Management Plan, indirectly benefit ecologically critical areas. Reducing nutrient loading and sewage flow into the bay would help improve water clarity, benefiting these ecologically critical areas where many aquatic organisms forage. Efforts to rehabilitate eroded areas with seagrasses would also improve essential fish habitat by providing continuous quality habitat for foraging aquatic organisms. The removal of structures and reduced watercraft use of the Stiltsville area under Alternative D would contribute to these beneficial effects. Because the area involved in this plan is small in comparison to the bay itself, the contribution of beneficial effect would be considered negligible. The combination of all efforts, however, would result in minor to moderate beneficial effects on ecologically critical resources and values within the region of the bay.

## **Conclusion**

Stiltsville is located in a highly productive seagrass habitat (Mulliken and VanArman 1995), and the identified essential fish habitat species use the bay for various functions of their life cycle. Localized effects to the ecologically critical areas during the structure removal activities would be negligible to minor and short-term with implementation of best management practices. The localized long-term beneficial effects of Alternative D on ecologically critical areas in the Stiltsville area would be minor to moderate, with a reduction in boating activity in the shoals. The cumulative effects of this plan and others to improve water quality and clarity would result in a minor to moderate beneficial effect on ecologically critical areas in the bay.

Alternative D would not produce major adverse effects on ecologically critical areas whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of ecologically critical areas as a result of the implementation of Alternative D.

## CULTURAL RESOURCES

### METHODOLOGY

Impacts to cultural resources are described in terms of type, context, duration, and intensity, as described above, consistent with the regulations of the Council on Environmental Quality (CEQ 1978) that implement the National Environmental Policy Act. These impact analyses also intend to comply with the requirements of Section 106 of the National Historic Preservation Act. In accordance with the Advisory Council on Historic Preservation's regulations implementing Section 106 (36 CFR Part 800, Protection of Historic Properties), impacts to cultural resources were identified and evaluated by:

Determining the area of potential effects;

Identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the National Register of Historic Places;

Applying the criteria of adverse effect to affected cultural resources either listed in or eligible to be listed in the National Register; and

Considering ways to avoid, minimize or mitigate adverse effects.

Under the Advisory Council's regulations, a determination of either *adverse effect* or *no adverse effect* must also be made for affected cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion in the National Register. For example, this could include diminishing the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association. Adverse effects also include reasonably foreseeable effects caused by the alternative that would occur later in time, be farther removed in distance or be cumulative (36 CFR Part 800.5, Assessment of Adverse Effects). A determination of *no adverse effect* means there may be an effect, but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion in the National Register.

Council on Environmental Quality regulations (CEQ 1978) and *Director's Order #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making* (National Park Service 2001a) call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, such as reducing the intensity of an impact from major to moderate or minor. Any resulting reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under the National Environmental Policy Act only. It does not suggest that the level of effect as defined by Section 106 is similarly reduced. Although adverse effects under Section 106 might be mitigated, the effect remains adverse.

A Section 106 summary is included in the impact analysis for cultural resources. The summary is intended to meet the requirements of Section 106 and is an assessment of the effect of implementing the alternative on cultural resources, based on the criterion of effect and criteria of adverse effect found in the Advisory Council's regulations.

The cultural and historical resources at Biscayne National Park were identified by researching historic records at the park, the Southeast Regional Office of the National Park Service, the University of



Miami, the Tebeau History Museum and Research Center of the Historical Association of Southern Florida, and other libraries. This research was conducted by Leynes *et al.* in 1998.

Because most cultural resources are nonrenewable, any effects on archeological, historic, or ethnographic resources, and on most elements of a cultural landscape would be long-term.

## ISSUES

Cultural resource issues include the potential for deleterious effects to cultural resources from vandalism, construction activities, or inadvertent exposure of the resources by increased erosion.

## REGULATIONS AND POLICIES

Numerous legislative acts, regulations, and National Park Service policies provide direction for the protection, preservation, and management of cultural resources on public lands. These laws and policies establish considerations in planning, such as in general management plans and implementation plans, and in administrative actions, such as rule-makings. They also define how cultural resources must be managed in future undertakings resulting from approved plans and rules, regardless of the final alternative chosen. Applicable laws and regulations include the:

National Park Service Organic Act of 1916 (P.L. 64-235);

Antiquities Act of 1906 (P.L. 59-209);

National Historic Preservation Act of 1966 (P.L. 89-665);

National Environmental Policy Act of 1969 (P.L. 91-190);

Archeological Resources Protection Act of 1979 (P.L. 96-95); and

Native American Graves Protection and Repatriation Act of 1990 (P.L. 101-601).

Applicable National Park Service policies relevant to cultural resources are included in *Management Policies 2001* (National Park Service and the *Cultural Resource Management Guideline* (DO-28).

The National Park Service Organic Act established the agency to manage the parks and monuments with the purpose of conserving historic objects within them and providing for their enjoyment.

The Antiquities Act authorized the President to establish historic landmarks and structures as monuments owned or controlled by the U.S. government and instituted a fine for unauthorized collection of their artifacts.

The National Historic Preservation Act, as amended, required in Section 106 that federal agencies with direct or indirect jurisdiction over undertakings take into account the effect of those undertakings on properties that are listed on, or eligible for listing on, the National Register of Historic Places. The act further requires federal land managers to establish programs in consultation with the State Historic Preservation Office to identify, evaluate, and nominate properties to the National Register. This act applies to all federal undertakings or projects receiving federal funds. The act also provides for confidentiality provisions where the release of sensitive site location information could endanger the resource.

The National Environmental Policy Act declared a federal policy to preserve important historic, cultural, and natural aspects of our national heritage, and required federal agencies to use a systematic, interdisciplinary approach to ensure the integrated use of the natural and social sciences in planning and in decision making which may have an impact on the human environment.

The Archeological Resources Protection Act further strengthened the federal government's efforts to protect and preserve archeological resources on public lands by stiffening criminal penalties, as well as instituting civil penalties, for the unauthorized collection of artifacts. Additionally, it established a permit system for the excavation and removal of artifacts from public lands, including their final disposition.

The Native American Graves Protection and Repatriation Act set forth procedures for determining the final disposition of any human remains, funerary objects, or objects of cultural patrimony discovered on public lands or during the course of a federal undertaking.

Florida State Historic Preservation Office, relevant tribes and tribal historic preservation officers, and, as appropriate, the Advisory Council in Historic Preservation would be afforded an opportunity to review and comment on the action.

#### **IMPACTS OF ALTERNATIVE A (MANAGED BY A NON-PROFIT ORGANIZATION)**

The implementation of Alternative A would have a minor beneficial effect on these resources by helping to preserve them for future use. Undesirable effects on cultural resources are unlikely, however, some indirect effects to submerged cultural resources may occur during construction activity resulting from disturbance to the bay bottom when anchoring barges and vessels or debris entering the water. Surveys of the substrate around those structures requiring significant improvements, such as the replacement of pilings, would be completed prior to project implementation. Newly discovered resources would be evaluated, documented and potentially removed, and appropriate mitigation measures would be developed in consultation with the Florida State Historic Preservation Officer to help avoid or reduce any potentially adverse impacts. Best management practices would be employed during the rehabilitation of the structures and replacement of pilings to reduce or avoid disturbance of the bay bottom. With these mitigations, only negligible, adverse impacts on presently unidentified submerged resources would be expected.

Enforcement of the park's regulations against disturbance of cultural resources would also continue. The addition of a regular presence in this northern portion of the park, such as the location of a satellite park office in one of the structures, would provide more protection against vandalism for submerged cultural resources by decreasing response time to Archeological Resources Protection Act or Antiquities Act violations. In addition to protecting resources from vandalism, the presence of a ranger in the vicinity would help reduce impacts to the seagrass beds from user activity, including watercraft access to the structures, and reduce the potential for inadvertent exposure and subsequent erosion of submerged cultural resources. The effects on cultural resources from continued use of the structures and access by watercraft would be localized, long-term, and negligible to minor.

The designation of one or more of the structures for educational and/or interpretive uses provides an invaluable opportunity to present visitors with Stiltsville's unique history and cultural resources. Although the history of the area may be told offsite, describing the cultural resources at Stiltsville would be more effective as it gives the park visitor a greater appreciation for the ambience and an increased understanding of the area.

### **Cumulative Effects**

The number and variety of archeological and historic resources in the region continues to diminish through development, erosion, vandalism, and collection of artifacts for profit or personal interest. Undesirable effects on cultural resources may occur under Alternative A from watercraft or construction activity. These activities contribute cumulatively to the losses of cultural resources available for scientific study and visitor enjoyment. However, loss would be minimized by use of proper controls on construction, park staff presence, and improved education.

When the negligible adverse impacts of Alternative A are combined with these past, present, and foreseeable future activities affecting cultural resources, negligible to minor, adverse, cumulative effects on archeological and historic resources would be anticipated.

### **Conclusion**

The implementation of the preferred action would have negligible long-term adverse impacts on submerged cultural resources from construction. Negligible to minor localized long-term adverse effects to cultural resources would result from the continued use and access to the structures compared to the no action alternative. The cumulative effects to cultural resources under this alternative would be adverse and negligible to minor.

Alternative A would not produce major adverse impacts on cultural resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of cultural resources or values as a result of the implementation of Alternative A.

### **IMPACTS OF ALTERNATIVE B (NATIONAL PARK SERVICE MANAGEMENT FOR PUBLIC USE)**

Alternative B would result in the National Park Service being responsible for the management, renovation, and maintenance of the seven stilt structures. The uses of the structures and the management prescriptions for this alternative would be the same as described for Alternative A. The effects to cultural resources therefore would be similar to Alternative A.

### **Cumulative Effects**

The cumulative effects associated with implementation of Alternative B would be similar to those described for Alternative A.

### **Conclusion**

The implementation of Alternative B would have negligible, long-term adverse impacts on submerged cultural resources from construction. Negligible to minor localized long-term adverse effects to cultural resources would result from the continued use and access to the structures compared to the no action alternative. The cumulative effects to cultural resources under this alternative would be adverse and negligible to minor.

Alternative B would not produce major adverse impacts on cultural resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of cultural resources or values as a result of the implementation of Alternative B.

### **IMPACTS OF ALTERNATIVE C (COMPETITIVE LEASING FOR PUBLIC USE)**

The implementation of Alternative C would likely have the same effect on cultural resources as Alternatives A and B. Like Alternative A, this alternative would provide a National Park Service presence either within Stiltsville or in the vicinity, to regulate use of the structures and watercraft activity. The competitive leasing program proposed with this alternative may result in the structures being leased for private use, which may result in increased use of the structures on weekends and holidays, but significantly less use on weekdays compared to Alternatives A and B. This may lead to less watercraft activity in the Stiltsville area and therefore a potential for less disturbance to the bay bottom that can expose submerged cultural resources. However, this potential improvement over Alternative A may be offset by an increase in the likelihood that the non-professional boat operators may lack the proper navigational skills required to access the area and could increase opportunities for scouring and erosion of the bay bottom. The long-term, adverse effects on cultural resources from access to the structures would therefore be negligible to minor.

#### **Cumulative Effects**

The cumulative effects associated with implementation of Alternative C would be similar to those described for Alternative A.

#### **Conclusion**

The implementation of Alternative C would have negligible, long-term, adverse impacts on submerged cultural resources from construction, and would have minor, beneficial effects on the structures themselves. Negligible to minor, localized, long-term adverse effects to cultural resources would result from the continued use and access to the structures compared to the no action alternative. The cumulative effects to cultural resources under this alternative would be adverse and negligible to minor.

Alternative C would not produce major adverse impacts on cultural resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of cultural resources or values as a result of the implementation of Alternative C.

### **IMPACTS OF ALTERNATIVE D (REMOVAL OF STRUCTURES)**

Undesirable effects on the submerged cultural resources during the removal of the structures if debris fell on the bottom could occur during demolition. Surveys of the substrate around all of the structures would be completed prior to demolition. Newly discovered resources would be evaluated, documented

and potentially removed, and appropriate mitigation measures would be developed in consultation with the Florida State Historic Preservation Officer to help avoid or reduce any potentially adverse impacts. Best management practices would also be employed during the demolition activity to reduce or avoid disturbance of the bay bottom. With these mitigations, only negligible, adverse impacts on presently unidentified submerged resources would be expected. Structural removal would require consultation and coordination with the State Historic Preservation Office.

The removal of the structures could prevent accidental impacts to the submerged cultural resources during a storm event. During Hurricane Andrew, seven of the structures were damaged beyond repair and the debris was scattered around the vicinity. Removing the structures would minimize the likelihood of debris damaging the wrecks.

It is far more likely that the submerged cultural resources would benefit from the removal of the structures. The removal of the Stiltsville structures would reduce the watercraft traffic in the vicinity, which reduces the potential for groundings and accidental direct deleterious effects on submerged resources. Groundings in the vicinity of the structures can also negatively impact submerged resources because the affected area within the seagrass beds often erodes and expands. In the past, vandals have used the structures as staging areas for illegal digs and for orientation in locating the submerged wrecks. With the structures removed, the cultural resources would be more difficult to locate and excavation would be more difficult without a staging area. Overall, the removal of the structures would provide long-term benefits for future archeological research and result in negligible to minor benefits to cultural resources in the area.

### **Cumulative Effects**

The cumulative effects of this alternative on cultural resources would be less than those described for the other action alternatives. The region would lose an opportunity to educate the public regarding the history of the area in an exciting and unique environment, but there would be opportunities to inform the public about historical facts in other locations.

### **Conclusion**

With implementation of mitigation measures to reduce or avoid disturbance to cultural resources, the demolition activities associated with the structure removal would result in long-term negligible to minor adverse impacts. Reduced visitor use of the area after structure removal would reduce erosion of the bay bottom that could expose resources and reduce potential for vandalism and would result in long-term negligible to minor benefits to submerged cultural resources in the area. Demolition activities would contribute to other activities that negatively affect cultural resources, resulting in negligible to minor, cumulative effects on these resources.

Alternative D would not produce major adverse impacts on cultural resources or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of cultural resources or values as a result of the implementation of Alternative D.

## VISITOR USE AND EXPERIENCE AND VISITOR SAFETY

### METHODOLOGY

The first step in determining the effects of the alternatives on visitor experience and safety was to define the issues of concern. Each issue was evaluated using the procedures described in the “General Methodology” section. This impact analysis evaluates several aspects of visitor experience and safety, including diversity of activities, interpretation, visitor facilities and services, visitor experience values, structural integrity of the buildings, and appropriate, safe visitor activity. The conceptual nature of the alternatives necessitates qualitative analysis rather than quantitative. Consequently, professional judgment was used to reach reasonable conclusions as to the intensity and duration of potential impacts. The intensities of effects on visitor use and experience and visitor safety were determined using the criteria in Table 9.

Issues identified during planning and scoping include:

The numbers and types of people able to use Stiltsville from the various segments of the local community.

The types of experiences offered at Stiltsville, including education and interpretation and private family and social gatherings. There are currently few or no opportunities for visitor education in the northern portion of the park. The general public has been excluded from the Stiltsville structures except through specific invitation from members of the former leaseholder groups. The only way to access the site currently is with a private boat.

Increased visitor awareness of the existence and extent of the park.

Accessibility of the Stiltsville structures, including disabled access and opportunities for the economically disadvantaged.

The structural integrity of the buildings and their ability to safely accommodate large numbers of people. This includes the adequacy of protective features, such as guardrails.

Major social events, which can draw numerous boats, causing crowding and congestion in the channel and around the structures. The structures are not engineered for large numbers of people, and may be unsafe when such events occur; at least one structure failed during one such party, causing death and injuries. The conditions documented in the structural engineer’s report, which is included in Appendix A, may also pose safety hazards to visitors.

### REGULATIONS AND POLICIES

Management to provide for public enjoyment is directed by National Park Service *Management Policies* and the Organic Act. *Management Policies 2001* (National Park Service 2000b) states that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all park units and that the National Park Service is committed to providing appropriate, high-quality opportunities for visitors to enjoy the park units. Because many forms of recreation can take place outside of a national park setting, the National Park Service therefore seeks to:

Provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in a particular park unit.

Defer to others to meet the broader spectrum of recreational needs and demands that are not dependent on a national park setting. Those others can include local, state, and other federal agencies; private industry; and non-governmental organizations.

Unless mandated by statute, the National Park Service will not allow visitors to conduct activities that:

Would impair park resources or values;

Create an unsafe or unhealthful environment for other visitors or employees;

Are contrary to the purposes for which the park was established; or

Unreasonably interfere with the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park; National Park Service interpretive, visitor service, administrative, or other activities; National Park Service concessioner or contractor operations or services; or other existing, appropriate park uses.

#### **IMPACTS OF ALTERNATIVE A (MANAGED BY A NON-PROFIT ORGANIZATION)**

Under Alternative A, Stiltsville would be operated by the Stiltsville non-profit organization and its co-operators to provide a broad range of public uses. Overall, increased opportunities would result for the general public to benefit from the structures in ways not previously available. The Stiltsville structures would also enhance Biscayne National Park's capabilities to meet objectives for visitor understanding and appreciation of the park's resources and significance, and for protection and monitoring of park resources.

Alternative A would leave the Stiltsville structures in place. The structures would be rehabilitated and no major changes would be made to their appearance. The Miami community has expressed a strong sense of identity with Stiltsville and the site's association with Miami's vacation and recreation roots and is valued by many in the community. Under Alternative A, the history of the site and the nature of Stiltsville's place in Miami's built environment would not diminish and would continue as a source of enjoyment for the community. Viewing the structures from the mainland, from private boats, or as an attractive feature of local commercial tours would not be affected. This would result in long-term, minor to moderate, beneficial effects. The effect would be greater for those who have a stronger appreciation for or attraction to Stiltsville.

Annual visitation to the Stiltsville site would increase. Recreational and educational opportunities, and other site uses such as the "artist-in-residence" program, could create a small hub of activity within the park. The site would probably serve between 18,000 and 25,000 visitors per year. Visitors would arrive in small to medium size groups (e.g., school groups of 15 to 20 students) over a widespread use period.

Docking and mooring would be controlled and safety boating would be promoted through channel markers, wakeless zones, and requirements for certified operators for some uses. These actions would result in negligible to minor, beneficial impacts on visitor safety in the long term.

Physical improvements to the structures would ensure the structural integrity of the structures to support larger groups of people. Steps, decking, and handrails would all be of sound construction and would meet local building codes. These actions would produce long-term, minor, beneficial effects on visitor safety.

Stiltsville is many miles from the park's main visitor and administrative center at Convoy Point. Visitors in the northern portion of the park, including Stiltsville, are often unaware that they are in a national park. This is in part due to the minimal presence of park staff in this portion of the park. Increased presence of staff to contact visitors, conduct programs and services for the public, and operate a developed National Park Service site in the northern reaches of Biscayne National Park would serve to increase visitor awareness of the existence of the park and their presence in it.

Educational exhibits, interpretive activities, and locations for educational functions and classes would convey important environmental and resource stewardship information to potentially thousands of visitors a year. Overall visitor understanding and appreciation of the park would be enhanced by the learning experience provided at the Stiltsville site. This would result in long-term, minor to moderate, beneficial effects on visitor experience as visitors increase their knowledge and appreciation of the park and of Stiltsville.

An increased segment of the Miami community would be able to directly benefit from the Stiltsville structures. The presence of an interpretive center would open structures to anyone with a boat. If water taxi service were feasible and available, access would be increased to community members without boats. Clubs and service groups would have access for outings.

Rehabilitation of some of the structures would include Americans with Disabilities Act accessibility improvements. This would be beneficial and of moderate to major intensity for those with impairments that would otherwise limit their access to the structures and environment of Stiltsville.

Alternative A would provide opportunities to coordinate with the Miami-Dade County Public Schools to provide unique educational programs and experience. Groups of children, such as school classes, could be transported to Stiltsville via commercial carriers such as water taxis. The children would then spend a full or half day in a structured learning experience on the bay. For many of these children, particularly those who are economically disadvantaged, such a visit to Stiltsville could provide an opportunity to learn about the bay environment that might be otherwise difficult to obtain.

Overall improvement to site accessibility and service to a broad range of the public would generate beneficial impacts to those segments of the community that would be long-term and moderate in intensity.

The likely effects to activities commonly pursued by park visitors are summarized in Table 10.

For those visitors seeking a more solitary experience, such as those fishing on the flats, would be adversely affected by increased activities at Stiltsville. Past use patterns have resulted in primarily weekend use. Alternative A would increase weekday use and result in minor to moderate adverse effects on visitors who are used to lower levels of use at those times. Boat traffic would still be present in the Biscayne Channel by boaters accessing the open ocean.



**TABLE 10: ANTICIPATED EFFECTS TO COMMON VISITOR ACTIVITIES  
IN THE VICINITY OF STILTSVILLE**

<b>Activity</b>	<b>Effect</b>	<b>Explanation</b>
Fishing	Negligible adverse	The Safety Valve flats would still be available and accessible to visitors fishing from small watercraft that are appropriate for maneuvering in shallow waters.
Scuba diving	No effect	The Stiltsville site and the Safety Valve are not suitable for scuba diving, and this activity would not be affected by the proposed action.
Snorkeling	Negligible adverse	The area close to the Stiltsville structures provides good snorkeling opportunities in the seagrass beds. Under the proposed action, boating activity may increase slightly, which could slightly reduce the suitability of the area for snorkeling.
Waterskiing and windsurfing	No effect	Such activities are currently restricted to 100 yards from structures/piers, which would not change. The immediate site would remain unsuitable for these activities. Those wishing to view the site during these activities would not be affected.
Education and interpretation	Moderate beneficial effect	Visitors would have opportunities to learn about and experience significant park resources in ways that currently do not exist.
Bird watching	Possible negligible to minor beneficial effect	Additional sites for birdwatchers may be created at the site. This could provide enhanced bird viewing opportunities.

Increased traffic to the structures would add to traffic in the Biscayne Channel, resulting in negligible to minor impacts on boaters using the channel as a thoroughfare to the open ocean.

### **Cumulative Effects**

The updated general management plan and fisheries management plan for the park would provide enhancements to the services and resources of Biscayne National Park. Visitor education and interpretation would improve throughout the park, and implementation of the plans would enhance resource protection and the quality of Biscayne Bay's environment. This would increase the high-quality park resources that visitors can enjoy and the services and programs that enhance visitor understanding of the park. Other enhancements to the region's resources are occurring through implementation of the Surface Water Improvement and Management Plan and south Florida ecosystem restoration activities. In association with these activities, an increasing amount of information is flowing to the general public, producing an increase in public understanding and appreciation for the important resources and natural systems of south Florida. Improvements in public access to programs and information at Stiltsville would add to these larger park and regional improvements. Stiltsville could serve as an important location to reinforce efforts to teach the public about the value of the natural environment around them. This would be augmented by opportunities for environmental education and stewardship messages conveyed to area youth. The local community

emphasizes environmental education and awareness through public and private efforts such as the Biscayne Nature Center for Environmental Education and the Maritime and Science Technology High School.

The actions in this alternative would have a moderate to major, cumulative effect. Stiltsville is highly visible in the local community, and successful Stiltsville efforts consistent with regional environmental efforts would receive attention throughout the area.

### **Conclusion**

Implementation of Alternative A would result in long-term, minor to moderate, beneficial effects by providing for a broad range of public uses and opportunities for continued public enjoyment of Stiltsville. Increased presence of park staff would provide enhanced public awareness of Biscayne National Park and long-term, minor to moderate benefits. Long-term, minor to moderate, beneficial effects on visitor health and safety would result from increased staff, additional controls on boating practices, and physical structural and safety improvements to the structures.

### **IMPACTS OF ALTERNATIVE B (NATIONAL PARK SERVICE MANAGEMENT FOR PUBLIC USE)**

The impacts of Alternative B on visitor use and visitor experience would be similar to Alternative A. Management of the site by the National Park Service would provide the same types of activities and result in similar levels of visitation as under non-profit organization management.

### **Cumulative Effects**

The cumulative effects of Alternative B would be similar to Alternative A.

### **Conclusion**

Implementation of Alternative B would result in long-term, minor to moderate, beneficial effects by providing for a broad range of public uses and opportunities for continued public enjoyment of Stiltsville. Increased presence of park staff would provide enhanced public awareness of Biscayne National Park and long-term, minor to moderate benefits. Long-term, minor to moderate, beneficial effects on visitor health and safety would result from increased staff, additional controls on boating practices, and physical structural and safety improvements to the structures.

### **IMPACTS OF ALTERNATIVE C (COMPETITIVE LEASING FOR PUBLIC USE)**

To the extent that the competitive leasing process resulted in a range of uses and a level of visitation similar to Alternative A, the effects on visitor use and experience would be the same. Setting aside one structure for National Park Service use would provide long-term minor to moderate beneficial effects on visitor health and safety through increased staff presence, allowing greater interaction such as additional controls on boating practices. If some or all of the leases were for private and exclusive use, the opportunities for broad public use of the site would be less and the impacts on visitor experience and safety would vary.

Past leaseholders have invited non-profit and civic groups to use the structures a few days or weeks out of the year. The new leases would likely specify that structures used primarily for private purposes would also be made available for public purposes for a portion of the year. Structures leased for private purposes and available for use by environmental educational classes, civic and service organizations, and non-profits would generate moderate beneficial effects for those organizations that use the structures. The general park visitor would have limited opportunity to use or benefit from the structures, and the impact would be negligible.

For those groups and individuals involved in leases for private uses, the opportunity to use facilities within a national park on an exclusive basis would provide moderate to major, long-term, beneficial effects and enable high-quality and distinctive personal experiences while staying at the structure.

Improvements to the structures used for private purposes would also include improved access for handicapped visitors. This would result in moderate benefits to those visitors by enabling them to experience the distinctive and different opportunities associated with visiting the structures.

Structures leased for private purposes would meet the building codes. Railings and decking would be sound, and the structures would be rehabilitated to safely accommodate the specified maximum capacity for the structure. These improvements would produce a minor to moderate improvement on visitor safety.

Private use of structures would present opportunities for activities that, if uncontrolled or unmonitored, could result in safety hazards. This would include consumption of alcohol, excessive boat speeds, or unsupervised swimming by children. Negative effects on visitor safety would be negligible to moderate depending on the nature and composition of the groups using structures.

### **Cumulative Effects**

To the extent that competitive leases resulted in a mix of uses similar to Alternative A, there would be cumulative effects on visitor experience and visitor safety similar to Alternative A. Increases in private use compared to Alternative A would generate community benefits similar to Alternative A but at a reduced level. The cumulative beneficial effects of this alternative, with its higher levels of private use, would be minor. Stiltsville would still be highly visible in the local community, but less focus would be placed on activities and experiences that were consistent with regional environmental efforts than under Alternative A.

### **Conclusion**

Implementation of Alternative C would result in long-term, minor to moderate beneficial effects if a broad range of public uses and opportunities for continued public enjoyment were provided at Stiltsville, similar to Alternatives A and B. Increased presence of park staff would enhance public awareness of Biscayne National Park, with long-term minor to moderate benefits. Long-term minor to moderate, beneficial effects on visitor health and safety would result from increased staff, additional controls on boating practices, and physical structural and safety improvements to the buildings.

If a substantial number of structures were leased for private purposes, only limited public use would take place. Benefits to lessees would be long-term and moderate to major; those to public organizations using the structures would be long-term and moderate. Beneficial impacts on the experience for the general park visitor would be negligible.

Cumulative effects would be similar to Alternative A. If competitive leases result in higher levels of private and exclusive use, the cumulative beneficial effects of the alternative would be less and would be of minor intensity.

### **IMPACTS OF ALTERNATIVE D (REMOVAL OF STRUCTURES)**

With the structures removed, the open bay environment would be restored. Visitor experiences available in the Safety Valve area would be similar to those available elsewhere in the bay portion of the park. This would include open water boating, fishing in the flats, and swimming and snorkeling from boats. The addition of the area of the former structures for these activities would result in negligible beneficial effects for these visitors because the area occupied by the structures is relatively small and the structures did not substantially limit these activities in the past.

Elimination of the structures may adversely affect some boaters who have used the structures as aids to navigation to and through the Biscayne Channel. However, boaters with the skills and experience necessary for navigation in the bay use the aids of navigation maintained by the U.S. Coast Guard. These would remain as adequate guides for boaters in the channel. The adverse effect to boaters would be negligible and short-term.

Removal of the structures would provide long-term, minor to moderate benefit for those visitors who value and appreciate the natural seascape of the bay. For visitors who boat onto the flats to fish or seek passive experiences, the structures would no longer be a visual intrusion and the noises and activities formerly taking place at the structures would no longer distract from the passive experiences offered by the flats area.

Visitors who appreciate and value Stiltsville as an important component of the Miami viewscape would be adversely effected in the long-term. Effects would be of a minor to moderate intensity. For those visitors who have used the structures in the past or have been closely associated with them, the removal of the structures would result in moderate to major adverse effects. This would eliminate an experience that has been important to many local residents, whether they have been regular visitors, such as former leaseholders, or visitors who have occasionally attended parties, gatherings, or group events at the structures.

Removal of the structures would result in a loss of an opportunity to conduct interpretive or educational programs and to present the history of the area in the unique environment of Stiltsville. While the history of the area can be described in visitor centers at Convoy Point or any other landside location in the park, it could be more effectively described at Stiltsville because the park visitor would be able to appreciate the ambiance of the site first-hand and understand the attraction of the location. This would present a minor adverse affect to the general public or to educational institutions. In the past educational, non-profit and civic groups have used the structures periodically.

All safety hazards presented by the structures would be eliminated and would result in negligible to minor, beneficial effects on visitor safety.

### **Cumulative Effects**

The area that was formerly occupied by the Stiltsville structures would remain set against the backdrop of Key Biscayne and the Miami skyline. High volumes of boating use would also continue within the Biscayne Channel by boaters using this major thoroughfare for access to open water. Therefore,

opportunities to experience a restored natural seascape in this portion of the bay would be in the context of the larger, close-by urban landscape and continued high volumes of boating use. This would result in negligible to minor, beneficial cumulative effects to those who value an experience based on the natural environment.

With high volumes of boating and visitor activity taking place within the park and throughout the water-side part of the metro area, improvements in safety resulting from the removal of the structures would be negligible.

## **Conclusion**

The removal of the structures would result in the loss of an opportunity to present the history of the area in the unique environment of Stiltsville. With implementation of mitigation measures to reduce or avoid disturbance to cultural resources, the demolition activities associated with structure removal would result in long-term negligible to minor adverse impacts. Implementation of Alternative D would result in minor to moderate beneficial effects for visitors seeking quiet passive experiences in the Stiltsville area. The removal of the structures would add negligibly to the amount of open water available for visitor use. Improvements to the natural seascape would offer minor to moderate, beneficial effects for those who appreciate natural settings. For those who have used or have been associated with the structures, long-term adverse effects to their experiences relative to Stiltsville would be moderate to major. Minor, adverse effects would result from the elimination of opportunities for environmental education. Beneficial effects on visitor safety would be negligible to minor. Cumulative effects on visitor experience and safety would be negligible to minor.

## SOUND ENVIRONMENT/SOUNDSCAPE

### METHODOLOGY

Soundscape issues related to personal watercraft identified during scoping included the following:

- Compatibility of noise generated at the Stiltsville structures with the character of a national park.

- Disruptive noise from watercraft accessing the structures.

- Short-term construction noise from renovation or demolition of the Stiltsville structures.

- Protection of the natural soundscape.

- Impacts on submerged soundscape.

- Education about noise and natural soundscape.

Activities associated with use of the structures may affect the natural soundscape both above and below the water. This results from motorized watercraft use, loud social functions, stereos and other audio equipment, generator use, and normal maintenance and upkeep. Should some structures be renovated, construction activities would create periods of loud noise from the use of tools such as saws, pile drivers, and hammers.

Each issue was evaluated using the procedures described in the “General Methodology” section. Impacts on the Biscayne National Park soundscape are subjective and are characterized by each individual's personal opinions and tastes. No measurements of noise or quantified impacts to natural sound are available. The impact analysis is based on qualitative judgments of the effects of human-caused sound in the immediate area of the Stiltsville structures. The intensities of effects on the sound environment and soundscapes were determined using the thresholds in Table 9.

### REGULATIONS AND POLICIES

The fundamental mission of the National Park Service, established by law (16 *United States Code* 1 et seq.), is to conserve park natural and historic resources and to provide for the enjoyment of park resources only to the extent that the resources will be left unimpaired for the enjoyment of future generations. As described in Section 1.4.6 of *Management Policies 2001* (NPS 2000b), natural soundscapes are recognized and valued as a park resource in keeping with the National Park Service mission.

The natural soundscape is the aggregate of all of the natural sounds that occur in parks, together with the physical capacity for transmitting natural sounds. Management goals for soundscapes are included in Section 4.9 of *Management Policies 2001* (NPS 2000b) and in *Director's Order #47: Soundscape Preservation and Noise Management* (NPS 2000a).

*Management Policies 2001* (NPS 2000b) requires restoration of degraded soundscapes to the natural condition whenever possible, and protection of natural soundscapes from degradation. In Section 4.9, the National Park Service is directed to “take action to prevent or minimize all noise that, through

frequency, magnitude, or duration, adversely affects the natural soundscape or other park resources or values, or that exceeds levels that have been identified as being acceptable to, or appropriate for, visitor uses at the sites being monitored.”

Visitor uses of parks will only be allowed if they are appropriate to the purpose for which a park was established, and can be sustained without causing unacceptable impacts to park resources or values (Sections 8.1 and 8.2 of *Management Policies 2001*). Unless mandated by statute, the National Park Service does not allow visitors to conduct activities that, among other things, unreasonably interfere with “the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park.”

*Director’s Order #47: Soundscape Preservation and Noise Management* (NPS 2000a) requires, “to the fullest extent practicable, the protection, maintenance, or restoration of the natural soundscape resource in a condition unimpaired by inappropriate or excessive noise sources.” It also states that “the fundamental principle underlying the establishment of soundscape preservation objectives is the obligation to protect or restore the natural soundscape to the level consistent with park purposes, taking into account other applicable laws.” Noise is generally considered appropriate if it is generated from activities consistent with park purposes and at levels consistent with those purposes.

Director’s Order #47 provides the following policy direction: “Where natural soundscape conditions are currently not impacted by inappropriate noise sources, the objective must be to maintain those conditions. Where the soundscape is found to be degraded, the objective is to facilitate and promote progress toward the restoration of the natural soundscape.” Where legislation provides for specific noise-making activities in parks, the soundscape management goal would be to reduce the noise to the level consistent with the best technology available, which would mitigate the noise impact but not adversely affect the authorized activity. Where a noise-generating activity is consistent with park purposes, “soundscape management goals are to reduce noise to minimum levels consistent with the appropriate service or activity.”

A key concept for noise management in both *Management Policies 2001* and Director’s Order #47 is the purpose for which a park was established. The establishing legislation for Biscayne National Park states that the park was established “to preserve and protect for the education, inspiration, recreation, and enjoyment of present and future generations a rare combination of terrestrial, marine, and amphibious life in a tropical setting of great natural beauty.” Based on this statement, noise generated by recreation, including watercraft, is consistent with park purposes, but noise levels must be within the standards established by National Park Service regulations.

National Park Service regulations pertaining to noise abatement for boating and other water use activities in parks nationwide are included in 36 *Code of Federal Regulations* 3.7. These regulations prohibit operating a vessel on inland waters “so as to exceed a noise level of 82 decibels measured at a distance of 82 feet (25 meters) from the vessel” and specify testing procedures to determine such noise levels. Watercraft that exceed these levels are subject to fine and removal from the park.

Audio disturbances associated with public use and recreation are regulated by the National Park Service under 36 *Code of Federal Regulations* 2.12. These regulations prohibit the use of motorized equipment or machinery above 60 decibels measured at a distance of 50 feet. Noise levels which are deemed unreasonable considering the nature and purpose of the conduct, location, time of day, park’s purpose, and impact on other park users (36 CFR 2.12 (a)(1)(ii)) are also prohibited.

**IMPACTS OF ALTERNATIVE A (MANAGED BY A NON-PROFIT ORGANIZATION)**

The effects of Alternative A actions are evaluated against the No Action Alternative D that proposes the permanent removal of all seven structures from Biscayne Bay; therefore, the intensity of impacts of Alternative A are compared to a soundscape that includes all existing human activity in the area with the exception of sounds generated by activities associated with the existing seven Stiltsville structures.

Implementation of this alternative would result in a significant amount of construction activity during the renovation of these seven structures. Regardless of the type of use designation, these seven structures would have to meet existing local and state building codes prior to human occupancy. Also, subsequent to the renovation effort, routine maintenance efforts would be required to maintain the structural integrity of these units. Noise generated from renovation/construction activities and routine maintenance would have a direct, short-term, minor to moderate, adverse effect on the natural soundscape that would be similar to the short-term effects of the no action alternative. However, these adverse effects would be lessened if all seven structures were renovated at the same time and if reasonable time limitations on renovation were stipulated by the administering authority. For example, renovation activities for all seven structures would occur on weekdays within a six-month designated period. Likewise, all future routine maintenance might occur only on designated days of the month and only on weekdays.

The long-term future use associated with these seven structures would be determined only after a feasibility analysis and would potentially range from all public use to all private use, with a range of mixed-use options between the two extremes. The noise level, both for the surface and the submerged soundscape, would vary slightly with the range of potential use options. However, when compared to no action (the elimination of all structures and sounds associated with their use), the noise levels generated by public and/or private boating access and use of the structures in Alternative A would have a direct, long-term, minor to moderate, adverse effect on the natural soundscape. The minor to moderate adverse effect associated with Alternative A would be localized because the structures and associated access and activity represent negligible points of disturbance within the scale and context of the 174,000 acre Biscayne National Park environment.

**Cumulative Effects**

The potential noise level generated by the seven Stiltsville structures, regardless of their use designation, would have a negligible, adverse, cumulative effect on the natural soundscape because of the moderate, adverse effect of noise already associated with this heavily used urban/marine environment. The natural soundscape associated with this northern portion of Biscayne Bay is presently adversely affected by proximity to the Miami metropolitan area, Miami International Airport traffic, industrial activity, and intensive recreational/commercial boating.

**Conclusion**

Noise generated from renovation/construction activities and routine maintenance of the seven Stiltsville structures would have a direct but localized, short-term, minor to moderate adverse effect on the natural soundscape that would be similar to the short-term effects of the no action alternative.

The noise level generated by public and private boating access and use of the structures would have a direct but localized, long-term, minor to moderate, adverse effect on the natural soundscape when



compared to the no action alternative that would eliminate the structures and all associated sounds generated by their use.

Alternative A would have a negligible, adverse, cumulative effect on soundscape because of the moderate, adverse effect of noise already associated with this heavily used urban/marine environment.

Alternative A would not result in major adverse impacts on soundscape or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of soundscape or values as a result of the implementation of Alternative A.

### **IMPACTS OF ALTERNATIVE B (NATIONAL PARK SERVICE MANAGEMENT FOR PUBLIC USE)**

The range of potential uses, use levels for the structures, and associated activities would be similar to in Alternative A. The implementation of Alternative B would likely have similar effects on soundscape as Alternative A.

#### **Cumulative Effects**

The cumulative effects of Alternative B would likely be similar to Alternative A.

#### **Conclusion**

Noise generated from renovation/construction activities and routine maintenance of the seven Stiltsville structures would have a direct but localized, short-term, minor to moderate, adverse effect on the natural soundscape that would be similar to the short-term effects of the no action alternative.

The noise level generated by public and/or private boating access and use of the structures would have a direct but localized, long-term, minor to moderate, adverse effect on the natural soundscape when compared to the no action alternative that would eliminate the structures and all associated sounds generated by their use.

Alternative B would have a negligible adverse cumulative effect on soundscape because of the moderate adverse effect of noise already associated with this heavily used urban/marine environment.

Alternative B would not result in major adverse impacts on soundscape or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of soundscape or values as a result of the implementation of Alternative B.

### **IMPACTS OF ALTERNATIVE C (COMPETITIVE LEASING FOR PUBLIC USE)**

The range of potential uses and associated activities would be generally the same as Alternatives A and B; except that under Alternative C there would be a higher probability that competitive leasing

might result in more exclusive types of use than either Alternatives A or B. Assuming Alternative C would have more exclusive use, there would be fewer visitors than with Alternatives A and B. The implementation of Alternative C would likely have similar effects on the surface and submerged soundscape, both short-term and long-term, as Alternatives A and B, except that the adverse effects on the soundscape would be somewhat less adverse with Alternative C because of fewer people visiting the structures (see Tables 1 and 2). Over all, Alternative C would still have the same direct but localized, minor to moderate, adverse impacts, both short-term and long-term, when compared to the no action demolition alternative.

### **Cumulative Effects**

The cumulative effects of Alternative C would likely be similar to Alternative A.

### **Conclusion**

Noise generated from renovation/construction activities and routine maintenance of the seven Stiltsville structures would have a direct but localized, short-term, minor to moderate, adverse effect on the natural soundscape that would be similar to the short-term effects of the no action alternative.

The noise level generated by public and private boating access and use of the structures would have a direct but localized, long-term, minor to moderate, adverse effect on the natural soundscape when compared to the no action alternative that would eliminate the structures and all associated sounds generated by their use.

Alternative C would have a negligible adverse cumulative effect on soundscape because of the moderate adverse effect of noise already associated with this heavily used urban/marine environment.

Alternative C would not result in major adverse impacts on soundscape or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of soundscape or values as a result of the implementation of Alternative C.

### **IMPACTS OF ALTERNATIVE D (REMOVAL OF STRUCTURES)**

Implementation of Alternative D would have direct, short-term, minor to moderate, adverse effects on soundscape in a localized area during the time demolition of the seven structures was taking place. However, following removal of these structures, there would be a direct, long-term, minor to moderate, beneficial effect in this localized area because noise associated with boating access and use of the structures would be eliminated. Following removal a portion of the natural soundscape would be reclaimed, providing an incremental change toward preserving an intrinsic resource value associated with this nationally significant park resource.

### **Cumulative Effects**

The removal of the seven Stiltsville structures would have a negligible to minor, beneficial, cumulative effect on the natural soundscape because of the moderate adverse effect of noise already associated with this heavily used urban/marine environment. The natural soundscape associated with

this northern portion of Biscayne Bay is presently adversely affected by proximity to the Miami metropolitan area, Miami International Airport traffic, industrial activity, and intensive recreational/commercial boating.

## **Conclusion**

Implementation of Alternative D would have direct, short-term, minor to moderate, adverse effects on soundscape in a localized area while demolition of the seven structures was taking place. However, following removal of these structures there would be a direct, long-term, minor to moderate, beneficial effect in this localized area because noise associated with boating access and use of the structures would be eliminated.

The removal of the seven Stiltsville structures would have a negligible to minor, beneficial, cumulative effect on the natural soundscape because of the moderate adverse effect of noise already associated with this heavily used urban/marine environment.

Alternative D would not result in major adverse impacts on soundscape or values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of soundscape or values as a result of the implementation of Alternative D.

## VISUAL RESOURCES

### METHODOLOGY

Based on input received during the internal and public scoping processes, the following issues regarding visual resources were developed:

Intrusiveness of Stiltsville on the natural viewshed.

Viewing of watercraft, including ocean-going vessels in the Biscayne Channel, as a site resource from structures near the channel.

View of the Miami skyline, a sight that may be appreciated by school children who seldom get out onto the bay.

Impacts on visual resources were evaluated from two perspectives:

The view *from* the Stiltsville area. While the view from Stiltsville would not change, the numbers and types of visitors who have the opportunity to perceive the view from Stiltsville would vary by alternative.

The view *of* the Stiltsville area. This analysis considers the view of Stiltsville from the land and water. As examples, viewers looking south from Key Biscayne look directly across the Stiltsville area, and boaters using the Biscayne Channel travel through Stiltsville.

Each issue was evaluated using the procedures described in the “General Methodology” section. The analysis of impacts of alternative actions on visual resources is qualitative and reflects the subjective nature of individual opinions and tastes. The impacts to the visual resources and aesthetic quality of the area surrounding Stiltsville were determined by researching and reviewing public comments and the general community response to the Stiltsville area. The intensities of effects on visual resources were determined using the criteria in Table 9.

### REGULATIONS AND POLICIES

The National Park Service has not developed a visual resource management system for public lands under its jurisdiction; however, the overriding management purpose in a park is preservation of all significant resources, including the scenery. The National Park Service Organic Act states that one of the fundamental purposes of a national park is “to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in a such a manner and by such means as would leave them unimpaired for the enjoyment of future generations.”

Federal agencies are required by the National Environmental Policy Act of 1969 to take into consideration the effects of proposed federal actions on the human environment. Aesthetics are also identified by the Council on Environmental Quality regulations as an environmental factor that must receive consideration in determining the effects of a federal action. Title 23 *United States Code*. 109(h) and Technical Advisory T 6640.8A cite the aesthetic effect of proposed projects as an issue that must be fully considered in the preparation of environmental documents.

## **IMPACTS OF ALTERNATIVE A (MANAGED BY A NON-PROFIT ORGANIZATION)**

The effects of Alternative A are evaluated against the no action Alternative D that proposes the permanent removal of all seven structures from Biscayne Bay; therefore the intensity of impacts of Alternative A are compared to all existing natural and man-made components of this land/seascape with the exception of the structures and visible activities associated with Stiltsville.

Implementation of Alternative A would retain the Stiltsville structures and some level of associated uses. The effects of retaining, renovating, maintaining and using these structures (common to Alternatives A, B, and C) on the visual resource would be subjective, depending on an individual's perception and values. Although Stiltsville has been part of this visual resource for over 60 years, the retention of these structures would be considered an addition to the seascape scene when compared to the no action alternative. However, within the context of this large, developed, bay ecosystem, the presence or absence of this relatively small Stiltsville site would have a negligible to minor effect on the visual resource. Also, the variation of potential uses represented by this alternative would be discernible but would represent a negligible effect within this larger visual context. In the short term, the renovation of these structures would have direct, negligible to minor, adverse effect on the visual resource because of construction activities. In the long-term, the retention and use of these seven structures would have a direct and localized, negligible, adverse or beneficial effect, depending on the perception and values of the individual viewing the scene.

### **Cumulative Effects**

Depending on the values and interests of each visitor, the Stiltsville structures could have a beneficial or adverse incremental effect on the visual resource. Some might interpret Stiltsville as a desirable indicator of what is necessary to support the park's mission in providing education and recreation opportunities. Others might interpret Stiltsville as a visual encroachment or intrusion on this visual seascape scene. Because Stiltsville represents a relatively small-scale development in the middle of a much larger and already heavily impacted urban coastal environment, it is unlikely that these structures and associated activities would be generally considered more than a negligible or minor, adverse cumulative effect on the visual resource.

### **Conclusion**

The presence or absence of these structures provides the basic distinction for the visual resource effect. The continued presence and potential variation of uses represented by this alternative would be discernible but would represent a negligible effect within this larger visual context of this already heavily impacted urban coastal environment. In the short-term, the renovation of these structures would have direct, negligible to minor adverse effect on the visual resource because of the construction activities. In the long-term, the retention and use of these seven structures would have a direct and localized, negligible, adverse or beneficial effect, depending on the perception and values of the individual viewing the scene.

Because Stiltsville represents a relatively small-scale development in the middle of a much larger and already heavily impacted urban coastal environment, it is unlikely that Stiltsville and associated uses would be generally considered more than a negligible or minor, adverse, cumulative effect on the visual resource.

Alternative A would not result in major adverse impacts on visual resource values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of the visual resource values as a result of the implementation of Alternative A.

### **IMPACTS OF ALTERNATIVE B (NATIONAL PARK SERVICE MANAGEMENT FOR PUBLIC USE)**

The implementation of Alternative B would have similar effects on visual resources as Alternative A.

#### **Cumulative Effects**

The cumulative effects of Alternative B would be similar to Alternative A.

#### **Conclusion**

The presence or absence of these structures provides the basic distinction for the visual resource effect. The continued presence and potential variation of uses represented by this alternative would be discernible but would represent a negligible effect within the larger visual context of this already heavily impacted urban coastal environment. In the short-term, the renovation of these structures would have a direct, negligible to minor, adverse effects on the visual resource because of the construction activities. In the long-term, the retention and use of these seven structures would have a direct and localized, negligible, adverse or beneficial effect, depending on the perception and values of the individual viewing the scene.

Because Stiltsville represents a relatively small-scale development in the middle of a much larger and already heavily impacted urban/coastal environment, it is unlikely that Stiltsville and associated uses would be generally considered more than a negligible or minor, adverse cumulative effect on the visual resources.

Alternative B would not result in major adverse impacts on a visual resource values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of the visual resource values as a result of the implementation of Alternative B.

### **IMPACTS OF ALTERNATIVE C (COMPETITIVE LEASING FOR PUBLIC USE)**

The implementation of Alternative C would likely have similar effects on visual resources as Alternative A.

#### **Cumulative Effects**

The cumulative effects of Alternative C would be similar to Alternative A.

**Conclusion**

The presence or absence of these structures provides the basic distinction for the visual resource effect. The continued presence and potential variation of uses represented by this alternative would be discernible but would represent a negligible effect within this larger visual context of this already heavily impacted urban coastal environment. In the short-term, the renovation of these structures would have direct, negligible to minor adverse effect on the visual resource because of the construction activities. In the long-term, the retention and use of these seven structures would have a direct and localized, negligible, adverse or beneficial effect, depending on the perception and values of the individual viewing the scene.

Because Stiltsville represents a relatively small-scale development in the middle of a much larger and already heavily impacted urban coastal environment, it is unlikely that Stiltsville and associated uses would be generally considered more than a negligible or minor, adverse cumulative effect on the visual resource.

Alternative C would not result in major adverse impacts on visual resource values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of the visual resource values as a result of the implementation of Alternative C.

**IMPACTS OF ALTERNATIVE D (REMOVAL OF STRUCTURES)**

Implementation of Alternative D would require removal of the seven Stiltsville structures. In the short-term, the removal of these structures would have direct, negligible to minor adverse effect on the visual resource because of the intrusion caused by demolition activities. In the long-term, the removal of these seven structures would have a direct and localized, negligible to minor, beneficial or adverse effect, depending on the perception and values of the individual viewing the scene. However, when considering effect solely on the intrinsic value of the visual resource from the perspective of the park's mission, the impact of removing these non-historic structures would have a direct, long-term, negligible to minor beneficial effect, allowing a small portion of the bay to return to natural conditions.

**Cumulative Effects**

Because Stiltsville represents a relatively small-scale development in the middle of a much larger and already heavily impacted urban coastal environment, it is unlikely that the removal of Stiltsville and associated uses would be generally considered more than a negligible to minor, beneficial cumulative effect on the visual resource.

**Conclusion**

In the short-term, the removal of these structures would have direct, negligible to minor adverse effect on the visual resource because of the intrusion caused by demolition activities. In the long-term, the removal of these seven structures would have a direct and localized, negligible to minor, beneficial or adverse effect, depending on the perception and values of the individual viewing the scene. However, when considering effect solely on the intrinsic value of the visual resource from the perspective of the

park's mission, the impact of removing these structures would have a direct, long-term, negligible to minor beneficial effect, allowing a small portion of the bay to return to natural conditions.

Because Stiltsville represents a relatively small-scale development in the middle of a much larger and already heavily impacted urban coastal environment, it is unlikely that the removal of Stiltsville and associated uses would be generally considered more than a negligible to minor beneficial cumulative effect on the visual resource.

Alternative D would not result in major adverse impacts on visual resource values whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of the park, (2) key to the natural or cultural integrity of the park or opportunities for enjoyment of the park, or (3) identified as a goal in the park's general management plan or other National Park Service planning documents. Consequently, there would be no impairment of the visual resource values as a result of the implementation of Alternative D.



## **PARK OPERATIONS**

### **METHODOLOGY**

This section evaluates the effects on operations of the park, including efficiencies and effectiveness of the park staff's ability to manage the park in accordance with the purpose of the park and the laws and mandates that direct its management.

Through the scoping process, the following issues were identified regarding the effect of alternative actions on park operations:

An improvement to existing facilities and an increase in visitor services would increase demands on park operations.

Continued use of the structures may result in a need for a base for park operations in the northern portion of Biscayne National Park.

Continuing use of the structures may result in changes in service needs.

An increase in staff may be necessary to provide effective enforcement of National Park Service regulations, protect park resources in the area, and educate the public.

Retaining the Stiltsville structures would involve rehabilitation, maintenance, and operation costs, which could necessitate funding from alternate sources.

Having a National Park Service presence in the northern portion of the park would require adequate administrative space.

Each of these issues was evaluated using the procedures described in the "General Methodology" section. Impacts on park operations were evaluated based on information gathered from National Park Service documents and interviews with park personnel specialists, division chiefs, and program managers. Estimates of impacts on park operations resulting from alternative actions were determined using best professional judgment. The intensities of effects on park operations were determined using the criteria in Table 9.

### **REGULATIONS AND POLICIES**

Actions related to the various alternatives that affect park operations include the maintenance of the Stiltsville structures and the development and implementation of an education/interpretation program to enhance public awareness of the history and unique ecosystem associated with the area.

*Management Policies 2001* (National Park Service 2000b) guide maintenance activities in park units (Section 9.1.4.1). These policies state that the "Service will conduct a program of preventive and rehabilitative maintenance and preservation to (1) provide a safe, sanitary, environmentally protective, and esthetically pleasing environment for park visitors and employees; (2) protect the physical integrity of facilities; and (3) preserve or maintain facilities in their optimum sustainable condition to the greatest extent possible. Preventive and rehabilitative maintenance programs will incorporate sustainable design elements and practices to ensure that water and energy efficiency, pollution prevention, and waste prevention and reduction are standard practice."

Guidelines for interpretation and educational programs are also provided in National Park Service *Management Policies* (Chapter 7). These guidelines direct the National Park Service to disseminate to the public the history and significance, the resources, and the mission goals of the park. In instances when park managers are called upon to make difficult resource decisions that may be highly controversial, the interpretive and educational programs can build public understanding of, and support for, such decisions and initiatives and for the National Park Service mission in general. National Park Service *Management Policies* 2001 (Section 7.5.3) direct that “parks should, in balanced and appropriate ways, thoroughly integrate resource issues and initiatives of local and Service-wide importance into their interpretive and educational programs.” Policies also state that “resource issue interpretation should be integrated into both on- and off-site programs, as well as into printed and electronic media whenever appropriate” (Section 7.5.3).

### **IMPACTS OF ALTERNATIVE A (MANAGED BY A NON-PROFIT ORGANIZATION)**

Implementation of Alternative A would require an increased National Park Service presence in the northern portion of the park to liaison with the Stiltsville non-profit organization management staff and to monitor user activities. This may include the option of rehabilitating one stilt structure to serve as a small National Park Service satellite with a ranger office and interpretive contact center, a maintenance and storage area, and a boat dock. It would also involve an associated seven percent increase in staffing level, with two new permanent onsite staff and three new part-time offsite staff. If implemented, the estimated cost would have a direct, long-term, negligible to minor adverse effect on park operations due to the increased financial burden on the park to provide: 1) capital development costs of rehabilitating a stilt structure for National Park Service use; 2) permanent additional National Park Service staff to manage and maintain this satellite office operation; and 3) additional equipment needs (new patrol boats/associated support maintenance). This effect would be upgraded to direct, long-term, minor adverse effect if this alternative also exercised the option of having an additional mainland National Park Service support facility with staff to back up the stilt structure satellite office. However, if implementation of these actions takes place, Alternative A would improve law enforcement, visitor and resource protection, and public health and safety functions, and would decrease response time to the northern portion of the park, providing a direct, minor beneficial effect because of the slightly increased long-term National Park Service presence in this portion of the park.

### **Cumulative Effects**

Alternative A would have a direct, long-term, minor, beneficial cumulative effect on park operations when compared to Alternative D, the no action alternative, because of the small scale increased National Park Service presence and slightly improved capability of National Park Service staff to manage the external demands placed on park operations by ever-increasing visitation, park proximity to the expanding and highly urbanized environment of the Miami metropolitan area and associated attendant impacts, and the increased partnering with other stakeholder interests to manage this highly complex coastal ecosystem.

### **Conclusion**

Alternative A would have a direct, long-term, negligible to minor, adverse effect on the financial and staffing component of park operations because of the development, operation, maintenance, and staffing costs associated with the rehabilitation and use of a stilt structure as a satellite park ranger office and interpretive contact facility. However, if staff and facility increases occur, Alternative A would improve law enforcement, visitor and resource protection, and public health and safety

functions, and would and decrease response time to the northern portion of the park, providing a direct, minor beneficial effect because of the increased long-term National Park Service presence in this portion of the park.

### **IMPACTS OF ALTERNATIVE B (NATIONAL PARK SERVICE MANAGEMENT FOR PUBLIC USE)**

The National Park Service commitment to rehabilitate the seven Stiltsville structures and the development of a National Park Service mainland administrative, operations, and maintenance center would require a commitment of federal funds for design and construction.

This cost of rehabilitation might be defrayed somewhat if selected user organizations were receptive to assuming the costs of rehabilitation if accompanied by an incentive package that might include longer-term leases, National Park Service maintenance of structures, or National Park Service approval of an organization charging user fees. Rehabilitation costs might also be defrayed if concession contracts required concessioners to agree to rehabilitate and maintain the structures. An incentive to waive the concession franchise fee for a negotiated period would allow concessioners to recoup the capital development costs of rehabilitating and maintaining the stilt structures. Likewise, the National Park Service might consider Incidental Business Permits (activities or services that are initiated outside the park but take place in the park) to lessen the National Park Service burden to provide activities and services generated by the use of the Stiltsville structures.

This alternative would also increase the burden on National Park Service administration and management, who would develop the criteria and manage the selection of users for the Stiltsville structures. This burden on park operations might be somewhat reduced, if the selection resulted in uniform types of users and activities that meshed with the park's mission.

This alternative would likely require the National Park Service to develop an administrative and maintenance support facility with a bay-front docking and staging area (leased or new construct facility) on the adjacent mainland to handle the rehabilitation, long-term maintenance, and management of the Stiltsville operation. This long-term National Park Service commitment to manage and maintain Stiltsville would require a seven percent increase in staffing levels and additional equipment (e.g., ranger boats, vehicles, radios) to meet these new operational needs.

Alternative B would have a direct, long-term, moderate adverse effect on National Park Service operations by substantially increasing both the financial and staffing burden on National Park Service operations because of the potential full-range commitment of the National Park Service to provide the rehabilitation, maintenance, and management of all seven Stiltsville structures. This alternative would maximize the National Park Service presence in this heavily used northern portion of the park and would have a direct, long-term, moderate beneficial effect, allowing reduced response time for emergencies, improved monitoring for better resource protection needs, and the expansion of law enforcement, visitor protection, and public health and safety functions in the northern portion of the park.

### **Cumulative Effects**

Alternative B would have a direct, long-term, moderate, beneficial cumulative effect on park operations when compared to Alternative D because of a substantially increased National Park Service presence and significantly improved capability of National Park Service staff to manage the external

demands placed on park operations by ever-increasing visitation, park proximity to the expanding and highly urbanized environment of the Miami metropolitan area and associated attendant impacts, and the increased partnering with other stakeholder interests to manage this highly complex coastal ecosystem.

## **Conclusion**

Alternative B would have a direct, long-term, moderate adverse effect on National Park Service operations by substantially increasing both the financial and staffing burden on National Park Service operations because of the potential full-range commitment of National Park Service staff to provide the rehabilitation, maintenance, and management of all seven Stiltsville structures. This alternative would maximize the National Park Service presence in the heavily used northern portion of the park and would have a direct, long-term, moderate beneficial effect, allowing reduced response time for emergencies, improved monitoring for better resource protection needs, and the expansion of law enforcement, visitor protection, and public health and safety functions in the northern portion of the park.

## **IMPACTS OF ALTERNATIVE C (COMPETITIVE LEASING FOR PUBLIC USE)**

Impacts of Alternative C would be similar to those of Alternative A with respect to the costs of rehabilitation, assuming that the leases would require lessees to cover the cost of stilt structure rehabilitation. National Park Service development costs for any structures to be used by National Park Service would also be similar to Alternative A. Although fewer users per day would be expected under Alternative C, this would probably not alter National Park Service staffing needs as compared to Alternative A, because National Park Service would have an increased administrative staff burden for developing the criteria for selecting lessees, implementing and managing the lease selection process, and monitoring and managing the long-term competitive lease program. Also, the burden on park operations might be slightly increased, since there is a higher probability for “exclusive users” in Alternative C, potentially requiring more intensive monitoring. If on-site staff and facility options were implemented, Alternative C would have a direct, long-term, minor adverse effect on park operations due to the capital development costs associated with rehabilitation of stilt structures used for National Park Service purposes, as well as increased costs of additional National Park Service staff necessary to monitor users and manage the competitive lease program. The effects of Alternative C are similar to Alternative A with the exception of the increased burden of National Park Service initiation and long-term management of the competitive lease program. However, if National Park Service on-site options are implemented, Alternative C would improve law enforcement, visitor and resource protection, and public health and safety functions, and would decrease response time to the northern portion of the park, providing a direct, minor beneficial effect because of the slightly increased long-term National Park Service presence in this portion of the park.

## **Cumulative Effects**

Alternative C would have a direct, long-term, minor, beneficial cumulative effect on park operations when compared to Alternative D because of the small scale increased National Park Service presence and slightly improved capability of National Park Service staff to manage the external demands placed on park operations by ever-increasing visitation, park proximity to the expanding and highly urbanized environment of the Miami metropolitan area and associated attendant impacts, and the increased partnering with other stakeholder interests to manage this highly complex coastal ecosystem.

## **Conclusion**

Alternative C would have a direct, long-term, minor adverse effect on park operations due to the capital development costs associated with rehabilitation of stilt structures used for National Park Service purposes as well as increased costs of additional National Park Service staff necessary to monitor users and manage the competitive lease program. If staff and facility increases occur, Alternative C would improve law enforcement, visitor and resource protection, and public health and safety functions, and would decrease response time to this portion of the park, providing a direct, minor beneficial effect because of the slightly increased long-term National Park Service presence in this northern portion of the park.

## **IMPACTS OF ALTERNATIVE D (REMOVAL OF STRUCTURES)**

The removal of the seven Stiltsville structures would have a direct, long-term, moderate beneficial effect on the financial component of National Park Service park operations because this action would eliminate any future need to expend National Park Service funds to renovate or preserve these structures. Likewise, this action would eliminate the need to provide additional staffing to manage any future use that might be considered for these structures. However, there might be a potential direct, short- and long-term, moderate adverse effect on law enforcement, visitor and resource protection, and public health and safety park operation functions in this northern portion of the park, if the National Park Service were to forego the opportunity for an increased presence in this portion of the park due to the removal of these seven structures.

## **Cumulative Effects**

Alternative D would have a direct, long-term, minor to moderate, adverse cumulative effect on park operations because of the potential for minimal National Park Service presence in this northern portion of the park. The potential for a limited National Park Service presence would seriously hamper the National Park Service's ability to manage the external demands placed on park operations by ever-increasing visitation, park proximity to the expanding and highly urbanized environment of the Miami metropolitan area and associated attendant impacts, and the increased partnering with other stakeholder interests to manage this highly complex coastal ecosystem.

## **Conclusion**

The removal of the seven Stiltsville structures would have a direct, long-term, moderate beneficial effect on the financial component of National Park Service park operations because this action would eliminate any future need to expend National Park Service funds to renovate or preserve these structures. Likewise, this action would eliminate the need to provide additional staffing to manage any future use that might be considered for these structures. However, there might be a potential direct, short and long-term, moderate adverse effect on law enforcement, visitor and resource protection, and public health and safety park operation functions in the northern portion of the park, if the National Park Service were to forego the opportunity for an increased presence in this portion of the park due to the removal of these seven structures.

## **SOCIOECONOMICS**

### **METHODOLOGY**

The impact analysis evaluates two separate socioeconomic areas including tourism and recreation, and the local and regional economy. A quantitative analysis was not conducted because the additional cost of that analysis was not considered reasonably related to the expected increase in the quantity or quality of relevant information. Due to the conceptual nature of the plan, the National Park Service believes that a qualitative analysis provides sufficient assessment of all relevant socioeconomic impacts associated with this decision-making. Therefore, professional judgment was applied to reach reasonable conclusions as to the context, intensity, and duration of potential impacts.

Economic effects of the four alternatives for managing Stiltsville were evaluated based on the following issues identified during internal and public scoping processes:

The alternative actions would have different effects on tourism related to visitation or economic activities associated with park use.

Commercial boat operators may be economically affected by alternatives that involve the development of education and the interpretive centers.

Changes in visitation or use of the structures may affect local retailers that supply services and goods, such as fuel sales or refreshments, to visitors and construction workers.

Each of these issues was evaluated using the procedures described in the “General Methodology” section. The intensities of effects on socioeconomics were determined using the criteria in Table 9.

### **REGULATIONS AND POLICIES**

Evaluations of social and economic impacts are directed by 40 *Code of Federal Regulations* 1500, Regulations for Implementing the National Environmental Policy Act.

### **IMPACTS OF ALTERNATIVE A (MANAGED BY A NON-PROFIT ORGANIZATION)**

Current trends in contributions to the county and regional economy by tourists and local recreational users would likely continue. The service and retail trade industries would be expected remain in the top employment sectors of the county and regional economy. The number of jobs generated under Alternative A to staff the structures or a satellite location for the National Park Service would be considered negligible. The increase of three permanent and two part-time jobs generated directly from continued use of the structures under the Stiltsville non-profit organization would represent less than 0.1 percent of the year 2001 employment of the county (1,005,810; <http://recenter.tamu.edu/Data/empc/LAUCN120860.htm>). Continuing management of the Stiltsville site would produce no adverse or beneficial effects to the regional economy.

Educational exhibits, ranger activities, and locations for group gatherings and day use may generate a minor increase in recreational usage of the park as a whole. Increased park usage would provide corresponding increases in business activity at marinas and boat launches providing access to the park. Use of structures may result in localized increases in expenditures for fuel, food, beverages, and

recreational equipment at retail businesses associated with marinas. Retailers would probably experience local negligible to minor beneficial effects of increased sales compared to the no action alternative.

The mix of uses proposed for the structures might result in a change in the distribution of visitor expenditure in the area compared to the current condition in which the expenditures by private leaseholders may be more widely distributed. Many of the uses proposed for the structures would likely result in use of the structures by groups, which may result in a concentration of spending at a few marinas as opposed to spread out around the bay. However, the number of visitors to Stiltsville who would support local businesses in the area, up to 25,000 under Alternative A, would be negligible compared to the number of people who visit Biscayne National Park itself (442,585) and the number of registered boats (550,660) in the region. Organization management of the structures under this alternative would result in a negligible adverse impact on individual businesses.

This alternative would probably not affect park-associated economic activities. Due to the shallow nature of the site, no commercial or significant sport-fishing activities are pursued in direct connection to Stiltsville. Alternative A would not affect economic activities associated with fishing. The Stiltsville site is not suitable for scuba diving, so commercial diving services would not be affected by the proposed action. Waterskiing and windsurfing activities are currently restricted to 100 yards from structures and piers, and this would not change with implementation of Alternative A. There would be no adverse or beneficial effects to businesses serving the park.

With this alternative, access to some of the structures would be limited to vessels operated by licensed commercial operators or licensed operators employed by the organization providing use of the structures. This requirement would result in an increase in business for those commercial operators within the bay area. The use of commercial boat operators to provide visitor access to the structures would displace some private entities that use their own vessels to access the structures under the current conditions. Because these individuals would probably continue to use their watercraft in the area, there would probably not be a noticeable decline in use of amenities in the bay area by these people; new users to the site would likely offset any reduction in expenditures.

The mix of public uses proposed under Alternative A would provide socioeconomic benefits by increasing opportunities for the public to use the structures. This alternative would provide for broad public access to the structures, which were previously accessible only to leaseholders. Because of the expense of owning and operating a boat, a large segment of the Miami metropolitan area has little opportunity to experience the bay's resources. This alternative would provide an opportunity for groups with limited funding and individuals with limited economic resources to use the structures and learn about the bay environment. The increased access to the general public through development of education facilities and visitor/interpretive centers would increase public awareness and understanding of the history and ecology of the Stiltsville area. Compared to the no action alternative, in which the structures would be removed, the long-term impacts of providing a wider range of opportunity to access the area would be beneficial and minor.

During implementation of the action, a negligible to minor, highly localized, beneficial economic effect would be generated by construction activities. The construction laborers working on renovating the structures within the park may require lodging in the vicinity. Food and other retail shopping by these laborers would probably occur in the local communities.

### **Cumulative Effects**

No cumulative impacts would be expected by implementing Alternative A.

### **Conclusion**

Implementing Alternative A would have long-term, negligible to minor beneficial effects to the local economy. There would be no adverse or beneficial effects to concessions within the park. The mix of public uses proposed under Alternative A would provide long-term, minor socioeconomic benefits by increasing the opportunities for the public, including the economically disadvantaged, to access the structures and gain an appreciation of park resources.

### **IMPACTS OF ALTERNATIVE B (NATIONAL PARK SERVICE MANAGEMENT FOR PUBLIC USE)**

Alternative B would result in National Park Service management and development of the structures to provide a broad mix of uses similar to Alternative A. The socioeconomic effects therefore would be similar to those described above for Alternative A.

### **Cumulative Effects**

No cumulative impacts would be expected by implementing Alternative B.

### **Conclusion**

Implementing Alternative B would have long-term, negligible to minor beneficial effects to the local economy. There would be no adverse or beneficial effects to concessions within the park. The mix of public uses would provide long-term, minor socioeconomic benefits by increasing the opportunities for the public, including the economically disadvantaged, to access the structure and gain an appreciation of park resources.

### **IMPACTS OF ALTERNATIVE C (COMPETITIVE LEASING FOR PUBLIC USE)**

This alternative would result in the structures being leased for private use for purposes similar to the range of uses defined in Alternative A as well as for private uses similar to those under the former non-renewable leases. Some of the structures could be used for park mission purposes, depending upon the proposals received. As described for Alternative A, the continued use of the Stiltsville structures would produce no adverse or beneficial effects to the regional economy.

Competitive leasing of the structures under this alternative may result in lower annual use of the area and less need for commercial boat operators compared to Alternatives A or B. The beneficial economic effects associated with this alternative therefore would be less than those described above for Alternatives A or B. Private leaseholders and their guests would likely generate a negligible increase in recreational use of the park as a whole and a negligible increase in corresponding spending at local businesses. Use of structures may result in localized increases in expenditures for fuel, food, beverages, and recreational equipment at retail businesses associated with marinas. Retailers would probably experience local negligible beneficial effects of increased sales compared to the no action alternative.



As with Alternative A, this alternative would probably not affect park-associated economic activities such as fishing, waterskiing or windsurfing, or scuba diving. There would be no adverse or beneficial effects to concessions within the park.

Use of the structures could be limited to leaseholders and their guests, thereby reducing a broad range of public use of the structures that would support the park mission. Compared to Alternatives A or B, there would be limited opportunity for the public, in particular the economically disadvantaged segment of the population, to learn about and experience this unique marine environment. However, compared to the no action alternative, in which structures would be eliminated, this alternative could result in negligible beneficial socioeconomic impacts, depending upon the number of structures that were used for park mission type purposes.

As with Alternatives A and B, construction activities during implementation of the action would generate a negligible to minor, highly localized, beneficial economic effect. The construction laborers working on renovating the structures within the park may require lodging in the vicinity. Food and other retail shopping by these laborers would probably occur in the local communities.

### **Cumulative Effects**

No cumulative impacts would be expected by implementing Alternative C.

### **Conclusion**

Implementing Alternative C would have long-term, negligible to minor, beneficial effects to the local economy compared to the no action alternative. There would be no adverse or beneficial effects to concessions within the park. Compared to the no action alternative, Alternative C could result in long-term negligible socioeconomic benefits from increased opportunities for the public, including the economically disadvantaged, to access the structure and gain an appreciation of park resources.

### **IMPACTS OF ALTERNATIVE D (REMOVAL OF STRUCTURES)**

This alternative would result in the structures being demolished, with their use therefore eliminated. The many Stiltsville visitors, including former leaseholders, are residents of the region, and their use of the bay area would probably continue regardless of the presence or absence of the Stiltsville structures. Therefore, no effects on retailers within the local area are expected from implementation of Alternative D.

Due to the nature of the site and regulations in place to protect resources from recreational activities such as fishing, windsurfing or waterskiing, or scuba diving, this alternative would probably not affect park-associated economic activities. There would be no adverse or beneficial effects to concessions within the park.

Removal of the structures would eliminate any opportunities to provide public understanding of the history and ecology of the area. Compared to the other alternatives, this alternative would have a long-term, minor, adverse socioeconomic effect by eliminating the opportunity for a unique learning experience by all segments of the population.

Removal of the structures would have a negligible to minor, highly localized, beneficial economic effect resulting from demolition activities during removal of the structures. The laborers working on

removing the structures may require lodging in the vicinity. Food and other retail shopping by these laborers would probably occur in the local communities.

### **Cumulative Effects**

No cumulative impacts are expected with implementation of the no action alternative.

### **Conclusion**

Removal of the structures would have a short-term, negligible to minor, beneficial effect on local business related to construction activity. There would be no adverse or beneficial effects to concessions within the park. Removal of the structures would eliminate the opportunity for public use and educational opportunities to increase public awareness of the history and ecology of the area. This would result in long-term minor adverse socioeconomic effects compared to the other alternatives.

## **SUSTAINABILITY AND LONG-TERM MANAGEMENT**

### **THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY**

The intent of this determination is to identify whether the proposed action would trade the immediate use of the land or resources for any long-term management possibilities, adversely affecting the productivity of resources in the Stiltsville area or Biscayne National Park. This determination also discloses whether the actions associated with the alternatives would be a sustainable action that could continue over the long-term without environmental problems (National Park Service 2000b).

None of the alternatives would result in substantial loss or impairment of natural resources or values in the area as a consequence of their implementation. Long-term productivity in the vicinity of Stiltsville is related primarily to the seagrass beds and the shallow-water communities they support. This marine ecosystem is adapted to extreme wind and wave action, which periodically causes the localized removal of vegetation and the disturbance of shallow substrate. If the source of a disturbance is removed, the vegetation naturally is reestablished to the extent that, after a couple of decades, the aquatic community is indistinguishable from that occurring in adjacent areas.

Some of the best evidence of the ability of the seagrass beds to recover occurs at the sites of the former Stiltsville structures. As described in "Purpose and Need for the Plan," Stiltsville included 27 buildings in 1960. Some of those facilities were operated as commercial clubs that had heavy traffic, which would have resulted in numerous boat groundings. During that period, there were few if any controls on disposal of chemical or human wastes, and the bay did not enjoy the protection afforded from national park designation. As a result, these buildings would have had effects that were similar to or greater than those from the current structures. Despite these conditions, little if any evidence can be found from the structures that were removed prior to Hurricane Andrew, or the routes to them. Most of the sites of structures that were removed in 1992 following Hurricane Andrew can still be distinguished, but revegetation of these sites is occurring.

Because of the ability of the seagrass beds to recover, none of the alternatives would affect the long-term productivity of Biscayne Bay in the vicinity of Stiltsville. All of the alternatives would include measures to protect the bay's vegetation and substrate. In the short-term, these management actions would limit the areal extent of disturbance of vegetation and the bay bottom. Because all of the alternatives eventually would result in the removal of Stiltsville's structures, all of the sites eventually would return to levels of productivity similar to those that occurred before Stiltsville's structures were built.

### **ANY IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES THAT WOULD BE INVOLVED SHOULD THE ALTERNATIVE BE IMPLEMENTED**

The intent of this determination is to identify whether an alternative would result in effects or impacts that could not be changed over the long-term or would be permanent. An effect to a resource would be irreversible if the resource could not be reclaimed, restored, or otherwise returned to conditions that existed before the disturbance. An irretrievable commitment of resources involves the effects to resources that, once gone, cannot be replaced or recovered (National Park Service 2000b).

There would not be any irretrievable commitment of park resources. Irreversible commitment of resources would include the destruction of nonrenewable submerged cultural resources from construction or demolition activities, storm-caused debris impacting resources on the bay bottom; or grounding or propeller dredging by boats improperly navigating around the structures. Under all alternatives, taking appropriate mitigation measures to avoid these or other impacts (including exposure from construction or visitor vessel access or physical damage from construction activities) should reduce or avoid any impacts.

Repair of the existing structures would require the irreversible and irretrievable commitment of timber, hardware, and other building materials. These materials are readily available, and they are not considered a limited resource. This sort of commitment would occur with any building project, and would have a negligible effect.

The operation of boats accessing Stiltsville would result in the irreversible and irretrievable commitment of hydrocarbon fuels. However, it is likely that if Stiltsville were not available, these or other boats would be operated for a similar amount of time to access other features in the bay area. Therefore, the alternatives would have a negligible effect on fuel consumption. In addition, hydrocarbon fuels are readily available and do not currently represent a limited resource.

#### **ANY ADVERSE IMPACTS THAT CANNOT BE AVOIDED SHOULD THE ACTION BE IMPLEMENTED**

Unavoidable adverse impacts are those environmental consequences of an action that cannot be avoided, either by changing the nature of the action or through mitigation if action is taken. Therefore, they would remain throughout the duration of the action.

Unavoidable impacts would occur under Alternatives A, B, and C from continued watercraft access to the structures.

Water quality would be adversely impacted by emission of pollutants from watercraft.

As boats continued to access the structures, the potential for adverse impacts to seagrass from watercraft groundings and propeller scarring would still exist.

The presence of the structures would continue to shade the underlying bay bottom and prevent the reestablishment of seagrasses.

The impacts to seagrass and the noise generated from watercraft would continue to affect wildlife that use the area for forage and breeding.

The potential for watercraft groundings and disturbance to the bay bottom could result in the exposure of submerged cultural resources, increasing their vulnerability to wave action and vandalism.

Noise generated by watercraft activity and use of the structures would continue unavoidable adverse effects to the natural soundscape and the experience for some visitors.

Demolition of the structures under Alternative D, and visitor use of the area and construction activities associated with Alternatives A, B, and C would reduce the relative availability of these historic resources for future interpretation and development.

## CONSULTATION AND COORDINATION

### HISTORY OF PUBLIC INVOLVEMENT

*The Stiltsville Advisory Committee:* As directed by the National Park System Advisory Board, the Stiltsville Advisory Committee was established in January 2001 to identify and recommend appropriate future public uses of Stiltsville, and to develop and recommend decision trees to guide the future operation of the seven stilt structures in Biscayne National Park in southeast Florida. Advisory Board member Marie Ridder was selected by Chairman John Hope Franklin to head the Stiltsville committee. Elected officials, the legal representatives of the private leaseholders, the National Park Service, and Ms. Ridder nominated individuals from the community to be appointed by Chairman Franklin. All 21 nominations received were appointed to the Stiltsville committee.

In an effort to understand the issues involved in recommending future public use of the seven stilt structures, the committee met on March 19, 2001, for an orientation of Biscayne National Park and a site visit to Stiltsville. The committee also met on March 20 and 21 and again on May 15, 2001. All meetings were open to the public and announced via a direct mailing to over 900 people, news stories, and a letter to the Miami Herald Editor with an open invitation. An open house session was held on the evening of March 20, 2001, to encourage public participation and comment as to appropriate public uses of the Stiltsville structures. An e-mail address was created to accept electronic comments, and the park accepted faxed comments on behalf of the committee.

The committee reviewed the input from the National Park Service, the members of the committee, and comments and suggestions from the public. They considered several scenarios for the future of Stiltsville, including mothballing and removing the structures, but the committee came to the unanimous decision that the existence of the structures and the surrounding environment is a critical area and important to the citizens of south Florida and all visitors of the Biscayne National Park.

Building upon the March 2001 meetings, the National Park System Advisory Board chaired two subsequent meetings of the Stiltsville Advisory Committee on May 4 and 5, 2002, in Miami, Florida. The meetings were open to the public; notification included sending notices to the park's mailing list, website announcements, and newspaper announcements. The purpose of the meetings was to develop a preferred alternative for the use and management of Stiltsville that would amend the park's existing general management plan.

The May 27, 2002, meeting with the National Park Service Advisory Board was held via telephone. A notice of the meeting was placed in the *Federal Register* and open to the public. Board members called in from locations around the country. The purpose of the meeting was to allow the Board to discuss and vote on the recommendations that the Committee had made at the May 4 and 5 meetings. The Board approved the May 5 recommendations of the Committee.

A noticed location for the public to listen to and to provide comments to the National Park Service Advisory Board was at the park's headquarters in Homestead, Florida. A second location was in Washington, D. C.

*Public Scoping Meetings:* Two public scoping meetings were held to solicit comments for the development of the general management plan amendment and environmental impact statement for managing the Stiltsville area. The meetings were held on September 24 and 25, 2001, at locations in Miami and Homestead, Florida. The meetings were held in a casual, open-house style, and were well attended.

A total of 85 comments were gathered at these public scoping meetings. The majority (56 percent) of the comments favored maintaining the status quo with the existing lessees remaining in long-term leases and control of the structures. Twenty-four percent of the comments expressed doubts that the National Park Service would be able to maintain and manage the structures and suggested that either status quo or another option be offered. Eighteen percent of the attendees were in favor of the structures being open for public use, and only one attendee recommended that the structures be removed.

*Web Site:* The park's web site has presented comprehensive information about Stiltsville and the planning effort, and has been used to solicit e-mail comment. The information presented on the web site includes meeting dates and locations, press releases, planning updates, and contact information. Documents specific to the planning process are also posted on this site. The web page can be accessed at <http://www.nps.gov/bisc/stiltsville/stiltsvillewelcome.htm>.

There are also several websites operated by private individuals or organizations. Many of these have not been updated for the last two years, or since the park decided not to remove the structures. The websites still provide valuable insight and a historical perspective to the project.

Following release of the *General Management Plan Amendment and Draft Environmental Impact Statement*, there was a 60-day public review and comment period on the document. This period ended on February 13, 2003. Public open houses were held in Homestead on December 16, 2002, and in Miami on December 17, 2002. Comment sheets were provided for people to submit written comments, and staff recorded verbal comments. The public was encouraged to comment via Internet at the park's web site or in writing during the comment period.

## **ENDANGERED OR THREATENED SPECIES CONSULTATIONS**

In accordance with Section 7 of the Endangered Species Act (16 *United States Code* 1531 et seq.), the National Park Service conducted informal consultation with the U.S. Fish and Wildlife Service (Appendix G.1) and the National Marine Fisheries Service (Appendix G.2). A letter from the U.S. Fish and Wildlife Service dated December 6, 2002 (included in Appendix G.1), asked for the opportunity to review plans for activities that may impact ARNIs so that the Service could provide to reduce impacts to fish and wildlife sources in the area if impacts the project could result in impacts. Tables and maps enclosed with the letter identified listings and locations of endangered, threatened, proposed, and candidate species and their associated critical habitats.

The U.S. Fish and Wildlife Service verbally notified the National Park Service that it would not be issuing comments on the draft environmental impact statement.

## **CULTURAL RESOURCES CONSULTATIONS**

On October 11, 2002 Biscayne National Park sent letters to the Florida State Historic Preservation Officer (Appendix G.3) and the National Advisory Council on Historic Preservation (Appendix G.4).

The letters invited them to participate in the planning process and informed them that the National Park Service plans to use this environmental impact statement to fulfill the requirements of Section 106 of the National Historic Preservation Act as well as to comply with provisions of the National Environmental Policy Act. A reply dated February 4, 2002, was received from the Florida State Historic Preservation Officer acknowledging that the National Park Service will be using the environmental impact statement process to accomplish Section 106 compliance and stating that the proposed undertaking will have no adverse affect on historic properties listed or eligible for listing in the *National Register* or otherwise of historical, architectural, or archaeological value. A copy of this correspondence is included in Appendix G.

**AGENCIES/TRIBES/ORGANIZATIONS/INDIVIDUALS CONTACTED**

Miami-Dade Department of Environmental  
Resources Management  
Natural Resources Division  
Restoration and Enhancement Section  
Stephen Blair, Chief  
33 Southwest 2nd Avenue  
Miami, FL 33130  
305-372-6853

Dr. Otis Brown  
Rosensteil School of Marine and  
Atmospheric Science, Dean  
4600 Rickenbacker Causeway  
Key Biscayne, FL 33149

Michael R. Johnson  
Fishery Biologist  
National Marine Fisheries Service  
Habitat Conservation Division  
11420 North Kendall Drive Suite 103  
Miami, FL 33176  
305-595-8352  
[Mike.R.Johnson@noaa.gov](mailto:Mike.R.Johnson@noaa.gov)

Petty Officer Reed  
United States Coast Guard  
Seventh CG District – Miami  
U.S.C.G. Marine Safety Office  
P.O. Box 01-6940  
Miami, FL 33101-6940  
305-732-0160

Lt. Palfaey  
Florida Marine Patrol (FWC) - Boating  
Statistics  
3200 NE 151 Street

Miami, FL 33181  
305-956-2500  
[http://floridaconservation.org/law/marineenfor  
cement.htm](http://floridaconservation.org/law/marineenforcement.htm)

Roger Pugliese  
South Atlantic Fishery Management Council  
One Southpark Circle, Suite 306  
Charleston, SC 29407-4699  
843-571-4366

Ric Rubsamen  
National Marine Fisheries Service  
9721 Executive Center Drive North  
St. Petersburg, FL 33702  
727-570-5317  
[ric.ruebsamen@noaa.gov](mailto:ric.ruebsamen@noaa.gov)

Pat Kenney  
National Park Service – Denver Service Office  
303-969-2674

Joyce King  
Audubon Society - St. Petersburg Chapter  
Conservation Chairperson

Ann Paul  
Florida Audubon Society

Jeanne Murphy  
Wildlife Specialist  
University of Florida / Pinellas County  
Extension Service  
12175 125th Street North  
Largo, FL 33774  
727-582-2100



## **LIST OF PREPARERS**

### **NATIONAL PARK SERVICE**

Linda Canzanelli, Superintendent, Biscayne National Park  
Rick Clark, Chief, Resources Management, Biscayne National Park  
Richard Curry, Science Coordinator, Biscayne National Park  
Brenda Lanzendorf, Archeologist, Biscayne National Park

### **PARSONS**

Timberly Belish, Senior Scientist, Biology and Park Planning  
Jacklyn Bryant, Senior Scientist, Socioeconomics  
Pat Ditzel, Word Processor  
John Hoesterey, Project Manager  
Kathy Kuhlman, Principal Scientist, Biology  
Brian Lane, Senior Scientist, Biology  
Scott Lowry, Editor  
Kathy Pete, Senior Scientist, Park Planning  
Yoav Rappaport, GIS Specialist  
Diane Rhodes, Principal Scientist, Cultural Resources  
Janet Snyder, Senior Editor

## LIST OF RECIPIENTS

### Federal Agencies

Advisory Council on Historical Preservation	National Park Service, Office of the Director
Arthur R Marshall Loxhatchee National Wildlife Refuge	U.S. Army Corps of Engineers
Big Cypress National Preserve	U.S. Border Patrol
Bureau of Land Management	U.S. Coast Guard
Cape Hatteras National Seashore	U.S. Customs
Channel Islands National Marine Sanctuary	U.S. Department of Agriculture, Habitat Conservation Division
Channel Islands National Park	U.S. Department of Agriculture, Natural Resources Conservation Service
Delaware Water Gap National Recreation Area	U.S. Department of Justice
Everglades National Park	U.S. Department of Transportation
Florida Keys National Marine Sanctuary	U.S. Environmental Protection Agency, Region IV
J N “Ding” Darling National Wildlife Refuge	U.S. Fish and Wildlife Service
National Marine Fisheries Service	U.S. Geological Survey
National Marine Sanctuary Council	U.S. Immigration and Naturalization Service,
National Oceanic and Atmospheric Administration	Virgin Islands National Park
National Park Service, Denver Service Center	

### State and Local Agencies

Broward County Commission	Florida Marine Fisheries Commission
Bureau of Parks Division 5	Florida Senate, Committee on Natural Resources
City of Coral Gables	Florida State Clearing House
City of Florida City	Greater Homestead/Florida City Chamber of Commerce
City of Homestead	Homestead Parks and Recreation Department
City of Miami Beach	Islamorada, Village Of Islands
City of Miami-Dade	Kiwanis Fish and Game
City of Plantation	Koreshan State Historic Site
Collier County	Mayor Alex Penelas' Office
Dade County Parks and Recreation	Miami Maritime Museum
Florida Coastal Management Program	Miami-Dade County
Florida Department of Environmental Protection	Miami-Dade Parks
Florida Department of Natural Resources	Monroe County
Florida Department of State, Historic Preservation	Oleta River State Park
Florida Department of Transportation	Senator Nelson's Office
Florida Fish and Wildlife Conservation Commission	South Atlantic Fishery Management Council
Florida Game and Freshwater Fish Commission	South Dade Soil and Water Conservation Service
Florida Governor’s Council on Indian Affairs	South Florida Regulatory Planning Council
Florida Inland Navigation District	South Florida Water Management District
Florida Keys Land & Sea Trust	Spaceport Florida Authority

### **Elected Officials**

Honorable Harvey Ruvin, Biscayne Bay Partnership Initiative	Honorable Bert J Harris, Jr., State House of Representatives
Honorable Miriam Alonso, Miami-Dade County	Honorable Alcee L. Hastings, U. S. House of Representatives
Honorable Bruno A. Barreiro, Miami-Dade County	Honorable Sally A Heyman, Florida State House of Representatives
Honorable Annie Bentacourt, Florida State House of Representatives	Honorable Daryl L Jones, Florida State Senate
Honorable Elaine Bloom, Florida State House of Representatives	Honorable Carlos La Casa, Florida State House of Representatives
Honorable Larcnia J. Bullard, Florida State House of Representatives	Honorable Willie Logan, Jr., Florida State House of Representatives
Honorable Jeb Bush, Executive Office of the Governor	Honorable Gwen Margolis, Miami-Dade County
Honorable James Bush, Florida State House of Representatives	Honorable Joe A. Martinez, Miami-Dade County
Honorable Gaston I. Cantens, Florida State House of Representatives	Honorable Carrie P Meek, U. S. House of Representatives
Honorable Barbara M. Carey-Shuler, Miami-Dade County	Honorable Kendrick Meek, Florida State Senate
Honorable Joe Carollo, City of Miami-Dade	Honorable Ralph E. Moore, Miami-Dade County
Honorable Roberto Casas, Florida State Senate	Honorable Jimmy L Morales, Miami-Dade County
Honorable John F Cosgrove, Florida State House of Representatives	Honorable Dennis C Moss, Miami-Dade County
Honorable Renier De La Portilla, Florida State House of Representatives	Honorable Bill Nelson, U. S. Senate
Honorable Peter Deutsch, U. S. House of Representatives	Honorable Manuel Prieguez, Florida State House of Representatives
Honorable Alex Diaz De La Portilla, Florida State House of Representatives	Honorable Pedro Reboredo, Miami-Dade County
Honorable Lincoln Diaz-Balart, U. S. House of Representatives	Honorable Luis E Rojas, Florida State House of Representatives
Honorable Mario Diaz-Balart, Florida State Senate	Honorable Ileana Ros-Lehtinen, U. S. House of Representatives
Honorable Betty T. Ferguson, Miami-Dade County	Honorable Marco Rubio, Florida State House of Representatives
Honorable Howard C Forman, Florida State Senate	Honorable Burt Saunders, State House of Representatives
Honorable "Rudy" Garcia, Jr., Florida State House of Representatives	Honorable Natacha Seijas, Miami-Dade County
Honorable Steven A Geller, State House of Representatives	Honorable E Clay Shaw, Jr., Attn: K Mullaney
Honorable Peter Goss, U. S. House of Representatives	Honorable Steve Shiver, City of Homestead, Attn: Cassie Harmon
Honorable Ken Gottlieb, Florida State House of Representatives	Honorable Ronald A Silver, Florida State Senate
Honorable Bob Graham, U. S. Senate	Honorable Ken Sorenson, Florida State House of Representatives
	Honorable Javier Souto, Miami-Dade County

Honorable William H Turner, State Senate  
Honorable Carlos L Valdes, State House of  
Representatives  
Honorable Hector M. Varela, W Kendall  
Commission Council, Area 11

Honorable J Alex Villalobos, Florida State  
House of Representatives  
Honorable Otis T Wallace, City of Florida City  
Honorable Frederica Wilson, Florida State  
House of Representatives

#### **Native American Tribes**

Miccosukee Tribe of Indians of Florida  
Seminole Nation of Oklahoma

Seminole Tribe of Florida  
United Southern and Eastern Tribes

#### **Organizations**

Ada Dive Club  
Aircraft Owners & Pilots Association  
American Fisheries Society  
American Oceans Campaign  
Archaeological & Historical Conservancy  
Atlantic Gamefish Foundation Inc.  
Auburn University, ME&R Center  
Audubon of Florida  
Audubon Society of the Everglades  
Baitmasters  
Balijet Environmental  
Ballyhoo Plantation Fish  
Beacon Council  
Big Cypress Water Resources  
Biscayne Aquatic Society Inc.  
Biscayne Bay Foundation  
Biscayne Bay Partnership Initiative  
Biscayne Bay Wingnet Association  
Boy Scouts of America  
Center for Marine Conservation  
Clean Ocean Action  
Clean Water Action  
Clean Water Trust  
Coast Alliance  
Coastal States Organization  
Dade County Public Schools  
Defenders of Wildlife  
Environmental Defense Fund  
Environmental Solutions International  
Florida Atlantic University  
Florida Audubon Society  
Florida Institute of Oceanography  
Florida Institute of Technology  
Florida International University  
Florida Keys Audubon Society  
Florida Marine Research Institute  
Florida Ocean Alliance  
Florida Wildlife Federation  
Floridians for a Sustainable Population

Friends of the Everglades  
Global Habitat Concerns Inc.  
Greater Miami Aviation Association  
Green America  
Homestead Yacht Club  
Hoover Environmental Group  
Izaak Walton League of America, Inc.  
Kea Environmental  
Keys Association of Dive Operators  
Marine Industries Association of South Florida  
Marine Resources Defense Fund  
Miami Circle Commission  
Miami Spring Springs Boat Club, Inc.  
Monroe County Commercial Fishermen Inc.  
Munson Foundation  
National Audubon Society  
National Parks and Conservation Association  
National Wildlife Federation  
Natural Resources Defense Council  
Nova Southeastern University  
Nova University  
Ocean Reef Community Association  
Pegasus Foundation  
Professional Marine Association  
Redland Citizens Association, Inc.  
Redland Conservancy  
Reef Relief  
Riviera Village Property Owners Association  
Sierra Club  
South Dade Senior High School  
South Florida Sports Fishermen Club  
Southeast Archeological Center  
Southwest Florida Regional Planning Council  
Southwest Florida Shrimp Association  
Submerged Resources Center  
Tavernier Community Association  
Tennessee Valley Authority Watershed  
Technical Services  
The Featherbeds Initiative

The Herbert W. Hoover Foundation  
The Marine Council  
The Nature Conservancy  
Theater of the Sea  
Tropical Anglers Fishing Club  
Tropical Audubon Society  
Tropical Everglades Visitors Association  
University of Florida Tropical Research & Education Center

University of Miami  
Upper Keys Citizens Association  
Village of Key Biscayne  
Vision Council  
Wilderness Society  
Wildlaw Florida Office  
World Wildlife Fund  
Youth Fishing Foundation

#### **Libraries**

Brockway Memorial Library  
Dade County Library  
Florida City Public Library  
Florida International University Library  
Homestead Branch Library  
Key Biscayne Branch Library

Key Largo Branch Library  
Miami-Dade Community College Library  
Opa-Locka Public Library  
South Dade County Library  
South Miami Branch Library  
State Library of Florida

#### **Businesses**

Adventures in Diving  
Amfac Parks & Resorts  
Amy Slate's Amory Dive Resort  
Angel Auto  
Aqua-Nuts  
Atlantic Coast Kayak, Co.  
Atlas Homestead, Inc.  
Best Bait, Inc.  
Biscayne Bay Times  
Biscayne National Underwater Park  
Biscayne Wingnet  
Boat Center  
Capt. Harry's Fishing Supply  
Caribbean Mrc, Vero Beach Lab  
Carney Environmental  
Collier Resources Company  
Dinner Key Bait  
Divers Outlet Store  
Earthwise Production  
Enterprise Florida, Inc.  
Fabulous Fishing Adventures  
Fish & Game Unlimited of Homestead  
Florida Power & Light Company  
Florida Scuba News  
Florida Sportsman Magazine  
Ghost Hunter Charters  
Greenhorne & O'mara Inc., Florida  
Environmental Services  
Hendrix Farms  
Hydraulic Sales  
Interamerican Trading & Products Corporation

J.A.M. Inc.  
Jones Boat Yard & Drydock Services  
Kelly Space & Technology, Inc.  
Key Largo Fisheries  
Keys Marine Lab  
Lehtinen, O'donnell, Vargas & Reiner  
Lynne Warrick Enterprises Inc.  
Marina Del Mar Resort  
Marine Lab  
Mcvicar, Federico, and Lamb Inc.  
Merrill-Stevens Dry Dock  
Miami Herald  
Miami New Times  
Mote Marine Lab  
Ocean Isle Estates  
Quiescence Diving Services, Inc.  
Ras Associates  
Southbay Ecosystems Inc.  
Southern Boating Magazine  
Space Access, LLC.  
Stephen Frink Photographic  
Steve's Shrimp  
Sun-Sentinel  
The Graham Companies  
Tropical Delights Organic Farm  
Turkey Point Nuclear Power Plant  
William Turner Tas  
Wingnetters Association

## RESPONSE TO COMMENTS

The National Park Service analyzed all comments received during the public comment period to identify and respond to substantive issues. A total of 21 documents resulting from review of the draft plan and EIS were received from individuals, organizations, and agencies. Table 11 lists the commenters and their assigned identification codes.

Nine of the documents received contained substantive comments. Substantive comments are defined as those that do one or more of the following:

Question, with reasonable basis, the accuracy of information on the DEIS.

Question, with reasonable basis, the adequacy of environmental analysis.

Present reasonable alternatives other than those presented in the DEIS.

Cause changes or revisions in the proposal.

Nonsubstantive comments are those in favor of or against the proposed action or alternatives, those that simply agree or disagree with NPS policy, or those that offer opinions or provide information not directly related to the issues or impact analysis. While the National Park Service values such input, nonsubstantive comments do not require a specific response, and were not coded and analyzed.

Comments from the two public meetings and copies of all written comments received are available for public review at Biscayne National Park.

Table 12 provides responses to the substantive comments. Each entry contains a comment, the identification code assigned to the document containing that comment, a topic code referring to the section of this final environmental impact statement addressed by the comment, and the response to that comment.

**TABLE 11: IDENTIFICATION OF COMMENTERS**

<b>Commenter</b>	<b>Commenter Identification</b>	<b>Commenter</b>	<b>Commenter Identification</b>
U.S. Environmental Protection Agency	BISC001	James R. Jude	BISC012
U.S. Department of Commerce	BISC002	John Eastman	BISC013
Collette R. Ide	BISC003	National Parks Conservation Association	BISC014
South Florida Water Management District	BISC004	Aragon, Burlington, Weil & Crockett (Paul Schwiep)	BISC015
South Florida Regional Planning Council	BISC005	Name withheld by request	BISC016
Florida Department of Environmental Protection	BISC006	Joan R. Mowery	BISC017
Leigh and Glenn Smith	BISC007	Izaak Walton League of America	BISC018
Christian D. Keedy	BISC008	Lloyd Miller	BISC019
Doreen J. Komocar, William H. Engelhard Sr., William H. Engelhard Jr.	BISC009	William Engelhard	BISC020
Doreen J. Komocar	BISC010	Ed Swakon	BISC021
Donald C. Lutton	BISC011		

TABLE 12: COMMENTS AND RESPONSES

Document ID	Topic Code	Comment	Response
004A South Florida Water Management District	Alternatives	All alternatives should include an active monitoring program that would include water quality analysis, trend analysis, and quarterly reports.	Water quality monitoring is a major activity at Biscayne National Park. Because the tidal rate of flow is so high in the Stiltsville area, high water quality is maintained there naturally. Current monitoring efforts provide sufficient input for management decision making. In addition, the preferred alternative would include strict operational requirements that would be imposed on all users of the Stiltsville structures.
004B South Florida Water Management District	Alternatives	An additional alternative is suggested to issue special use permits for exclusive use of the structures by permittees and their guests.	The National Park Service has no legal authority to issue special use permits for exclusive private use. Alternative C would allow use of the structures by competitive lease and would provide the opportunity for individuals, including the former leaseholders, to compete for leases. Priority would be given to lease proposals that provide public uses. If a sufficient number of lease proposals were not received that would provide public uses that meet the park mission, then leases could be granted to individuals or groups for their exclusive use to the extent that the lease agreements would allow.



**TABLE 12: COMMENTS AND RESPONSES (CONTINUED)**

<b>Document ID</b>	<b>Topic Code</b>	<b>Comment</b>	<b>Response</b>
004C  South Florida Water Management District	Alternatives	An additional alternative was suggested by the commenter that would leave the level of use as is, providing for only those necessary repairs that would protect public health and safety.	<p>The NPS Director's order 12 states that a full range of alternatives must be examined and that "the alternatives carried forward for analysis must meet project objectives to a large degree, although not necessarily completely." The National Park Service believes the draft and final environmental impact statements contain a reasonable range of alternatives under this definition.</p> <p>The alternatives analyzed in the draft and final environmental impact statement allow for analysis of the scenarios indicated by the commenter. Alternative C could result in use levels that are similar to current conditions. This would occur in structures that were leased for private use. Use of the structures under these conditions was analyzed in the Environmental Consequences section for each relevant impact topic. Repairs and upgrades to the structures under Alternatives A, B, and C would be made to bring the structures to a standard that would meet basic public health and safety needs.</p>
006A  Florida Department of Environmental Protection	Environmental Consequences	Whether the structures are removed or rehabilitated, the work will require an Environmental Resource Permit, and resource impacts need to be minimized during the proposed work with appropriate mitigating measures.	All state and county permitting requirements would be met prior to implementation of the preferred alternative and the commencement of construction activities. Mitigation measures are discussed in the Environmental Consequences section of each relevant impact topic. Mitigation measures would be included in the construction specifications included in all project contract documents. These would be reviewed by the appropriate federal, state and local agencies.

TABLE 12: COMMENTS AND RESPONSES (CONTINUED)

Document ID	Topic Code	Comment	Response
006B  Florida Department of Environmental Protection	Environmental Consequences	If the structures are to be maintained it is critical to protect surrounding submerged resources with proper routes to and from the sites by vessels with appropriate drafts.	<p>The preferred alternatives describes the following management and use guidelines that would minimize adverse effects on the surrounding environment:</p> <p>Stiltsville facilities open to the public, such as the visitor/interpretive center, would be housed in structures close to the Biscayne Channel to minimize the need for navigation through non-marked channels in the shoals.</p> <p>Access to some Stiltsville structures might be limited via reservation or special agreement, such as the artist-in-residence program, to maintain a specific visitor carrying capacity or type of visitor experience.</p> <p>Water access to some structures or programmed activities might be limited to vessels operated by licensed, commercial operators, or by licensed operators employed by the organization providing the use of the structure.</p> <p>Researchers or non-profit groups might be required to demonstrate proficiency in handling a boat to ensure user safety and protection of the park's resources.</p> <p>Access routes leading to/from the structures from adjacent channels may be demarcated by buoys to better facilitate navigation and minimize disturbance to adjacent seagrass beds.</p>
006C  Florida Department of Environmental Protection	Alternatives	The footprints of the existing structures should not be expanded.	Alternative C states that there would be no expansion of any structure or its footprint. This was also the intent within Alternatives A, and B. Text has been added to the final environmental impact statement to clarify this feature of the alternatives.

**TABLE 12: COMMENTS AND RESPONSES (CONTINUED)**

<b>Document ID</b>	<b>Topic Code</b>	<b>Comment</b>	<b>Response</b>
014A  National Parks Conservation Association	Alternative A	It was requested to change the purpose of a Stiltsville non-profit organization from “provide broad public access and diversity of use...” to “maintain the structures and to provide reasonable public access and diversity of use, prioritizing uses that enhance the purpose and mission of Biscayne National Park....”	<p>The purpose and need for the general management plan amendment reflects the essence of the comment and reinforces the framework for management that is established within the purpose and mission of Biscayne National Park. As stated in the Purpose and Need section of the draft and final environmental impact statement, the need for the amendment is to:</p> <ul style="list-style-type: none"> <li>Codify the change in the National Park Service position on Stiltsville from “removal” to managing the structures for public use and enjoyment.</li> <li>Define the strategies that will allow for diverse public use of Stiltsville.</li> <li>Protect the resources of the park, especially those immediately around the structures and within the Safety Valve area.</li> <li>Protect the health and safety of the public using the structures.</li> <li>Determine the sustainable, environmentally compatible design principles that should be applied to any renovation of facilities at Stiltsville.</li> <li>Establish a framework that could allow the structures to become financially self supporting.</li> </ul> <p>The organic documents for the non-profit organization will direct operations and management of the Stiltsville structures that will meet these needs and will provide for priority uses that are consistent with the purpose and significance of the park.</p>
014B  National Parks Conservation Association	Alternative A	The current occupants could be included in the management structure for Stiltsville, possibly representing the community of Biscayne Bay user groups.	It is the intent of the proposal to provide an opportunity for the broadest possible representation in the community (including former leaseholders) to be involved in the non-profit organization that is set up to manage and maintain Stiltsville.

TABLE 12: COMMENTS AND RESPONSES (CONTINUED)

Document ID	Topic Code	Comment	Response
014C National Parks Conservation Association	Alternative A	There is no guarantee that a non-profit will be able to raise money necessary to maintain the structures, nor manage them well. It should be stated that if the non-profit fails to adequately maintain or manage Stiltsville, then the National Park Service can terminate the agreement. A combination of Alternatives B and C should be stated as a contingency plan.	The agreement with the non-profit organization would have performance requirements written into it. If the non-profit were unable to fulfill these requirements, there would be a provision for terminating the agreement. Then another non-profit organization would be sought to manage Stiltsville. If another non-profit could not be found, Alternative C, competitive leasing would begin. If one or more structures could not be competitively leased, then NPS would manage those structures. The general management plan amendment does not have to provide the precise legal language to accomplish this.
014D National Parks Conservation Association	Purpose and Need	The DEIS does not describe the cultural significance of the structures, nor does it accurately depict them as resources being protected for their unique identity as opposed to their potential for visitor use. Stiltsville structures are not historic, but they represent an interesting era in Miami's history, and as a group they should be managed in a way that is sensitive to their place in the cultural fabric of the region.	<p>The draft and final environmental impact statement acknowledges the colorful past and local historical importance of Stiltsville. Two attempts, however, were made to have Stiltsville placed on the National Register of Historic Places, with the latest occurring in October 1999. In a letter dated that month, the Keeper of the National Register stated, "Stiltsville does not meet the definition of a traditional cultural property." The letter further states that Stiltsville does not meet National Register standards for exceptional historical or architectural importance required of structures built within the last 50 years; all of the current structures have been constructed after 1960.</p> <p>However, the analysis of environmental consequences in the draft and final environmental impact statement evaluates the benefits of protecting Stiltsville for presenting the site's unique history to visitors, and discusses that the history of the site and nature of Stiltsville's place in Miami's built environment would continue as a source of enjoyment for the community.</p>

**TABLE 12: COMMENTS AND RESPONSES (CONTINUED)**

<b>Document ID</b>	<b>Topic Code</b>	<b>Comment</b>	<b>Response</b>
014E National Parks Conservation Association	Alternative A	A visitor center should not be considered. It would likely attract many more boaters and visitors than the carrying capacity of the area would allow.	The National Park Service believes that the recreational carrying capacity methodology and the natural resource analysis used during development of the draft and final environmental impact statements provide a thorough investigation of the environmental consequences of the preferred alternative. The analyses contain the information necessary to determine an appropriate balance between resource carrying capacity and a positive visitor experience that would fulfill park objectives.
014F National Parks Conservation Association	Alternative A	Enforcement staff should be increased and provided with a base of operations at Stiltsville.	The National Park Service agrees with the comment and will request additional funding for enforcement staff at the appropriate time.
015A Aragon, Burlington, Weil and Crockett  (Paul Schwiep)	Purpose and Need	The commenter notes that within the framework of the Organic Act and NPS regulations that implement the Organic Act, exclusive private occupancy similar to the existing arrangement serves no legally defensible public purpose. None of the park's objectives, as referenced by the commenter, are advanced by providing further exclusive use.	The NPS Director's order 12 states that a full range of alternatives must be examined and that "the alternatives carried forward for analysis must meet project objectives to a large degree, although not necessarily completely." The National Park Service believes the draft and final environmental impact statements contain a reasonable range of alternatives under this definition.  Alternative C enables a full evaluation of continued private use and considers means to mitigate the effects of private uses, such as the use of best management practices, the presence of National Park Service staff, control and monitoring of access to the structures, and education programs.

TABLE 12: COMMENTS AND RESPONSES (CONTINUED)

Document ID	Topic Code	Comment	Response
015B  Aragon, Burlington, Weil and Crockett  (Paul Schwiep)	Alternative A	The organic documents of the non-profit organization and the agreement between the non-profit and NPS should mandate that Stiltsville be operated and managed for the benefit of the public, including ensuring an equitable allocation and use of facilities, and the avoidance of conflict among visitor use activities. The agreement between the non-profit organization and NPS must require the non-profit to operate and manage the structures for the public benefit, providing reasonable public access and use on a non-discriminatory basis, and using best management practices that keep the structures as environmentally benign as possible.	The general management plan amendment and the final environmental impact statement do not specify legal language or technical provisions of the agreement; these will be negotiated and developed at the time of formation of the non-profit organization. The general management plan amendment and final environmental impact statement cover the broad objectives to be attained by the agreement. Public benefit, non-discrimination, reasonable access, and best management practices are all intended to be part of the agreement with the non-profit organization. Most of these are required by law or policy.
015C  Aragon, Burlington, Weil and Crockett  (Paul Schwiep)	Alternative A	The non-profit organization must include a broad, representative cross section of the community, and the public should be included in the planning for the non-profit organization.	It is the intent of the preferred alternative, as reflected in the May 4-5, 2002 Stiltsville Committee Report to the National Park System Advisory Board, that the process of organizing the non-profit organization and the operation of the organization would be carried out by stakeholders who are representative of a cross section of the community. The description of the preferred alternative in the final environmental impact statement has been amended to more clearly state this intention.

**TABLE 12: COMMENTS AND RESPONSES (CONTINUED)**

<b>Document ID</b>	<b>Topic Code</b>	<b>Comment</b>	<b>Response</b>
015D Aragon, Burlington, Weil and Crockett  (Paul Schwiep)	Alternative A	The preferred alternative should reflect operation and management by a single organization and not “one or more organizations”. It would much more difficult for NPS to fulfill its management obligations with more than one organization.	The draft and final environmental impact statement indicate that one or more organizations should come together to form a single entity. Only one organization would be sought to manage Stiltsville. The description of the preferred alternative in the final environmental impact statement has been amended to more clearly state this intention.
015E Aragon, Burlington, Weil and Crockett  (Paul Schwiep)	Alternative A	The preferred alternative should be clear that NPS will retain (or “lease back” from the proposed non-profit organization) at least two of the structures to use as a visitor center and park office.	It is the intent of the National Park Service that the non-profit organization would consider a visitor center in one of the structures. The setting aside of all or part of such a structure would be part of the negotiations between the organization and the National Park Service.

**TABLE 12: COMMENTS AND RESPONSES (CONTINUED)**

<b>Document ID</b>	<b>Topic Code</b>	<b>Comment</b>	<b>Response</b>
009A Individual	Alternatives	Eliminate Alternative D from consideration	Alternative D is the no action alternative. The no action alternative must be fully analyzed in all environmental impact statements, even if another law prohibits the adoption of the no action alternative or the park is under legislative or other command to act. The no action alternative is usually a viable alternative, but even when it is not, it sets a baseline for comparing the impacts of existing actions with those proposed. The National Environmental Policy Act is designed as a planning process that is used for public disclosure of the range of reasonable alternatives, the consequences of those alternatives, and the agency's proposed course of action at the time the draft environmental impact statement is released. The NEPA process also provides opportunities for public comment on the proposed alternatives and analysis. The draft and final environmental impact statement contain a full disclosure of impacts associated with management of Stiltsville. Disclosing the proposed preferred alternative and the no action alternative in the draft environmental impact statement or in the course of public scoping does not mandate that the agency implement that alternative. Rather, it merely gives the public an opportunity to comment on the preferred alternative (along with the no action alternative and the other alternatives proposed), to suggest other alternatives and mitigation measures, and to present information or data to help the agency in its subsequent decision making. The final decision on the alternative that will be implemented will be contained in the record of decision, which will be available no sooner than 30 days after release of the final environmental impact statement.



**TABLE 12: COMMENTS AND RESPONSES (CONTINUED)**

<b>Document ID</b>	<b>Topic Code</b>	<b>Comment</b>	<b>Response</b>
009B, 010A Individual	Alternatives	On May 17, 2001, the Advisory Committee recommended that the 50 percent rule (any of the structures with more than 50 percent damage be removed) be waived. Why was this not included in the draft environmental impact statement?	On May 4-5, 2002, the Advisory Committee completed the Stiltsville Committee Report for transmittal to the National Park System Advisory Board. The committee's report (presented in the appendix of the draft and final environmental impact statement) did not recommend waiving the 50% rule. In a teleconference on May 9, 2002, the National Park System Advisory Board transmitted its recommendation for the management of Stiltsville to the National Park Service directorate. The official, independently prepared transcript of the teleconference contains no recommendation from the advisory board to waive the 50 percent rule. This rule, which set the criteria for deciding whether a damaged Stiltsville structure would be removed or repaired, was an element of the Stiltsville leases that were originally created by the State of Florida and transferred to the National Park Service upon inclusion of Stiltsville within the boundary of Biscayne National Park.
009C Individual	Purpose and Need	Stiltsville should be a "Historic Landmark".	<p>The draft and final environmental impact statement acknowledges the colorful past and local historical importance of Stiltsville. Two attempts, however, were made to have Stiltsville placed on the National Register of Historic Places, with the latest occurring in October 1999. In a letter dated that month, the Keeper of the National Register stated, "Stiltsville does not meet the definition of a traditional cultural property." The letter further states that Stiltsville does not meet National Register standards for exceptional historical or architectural importance required of structures built within the last 50 years; all of the current structures have been constructed after 1960.</p> <p>However, the analysis of environmental consequences in the draft and final environmental impact statement evaluates the benefits of protecting Stiltsville for presenting the site's unique history to visitors and of ensuring that the history of the site and nature of Stiltsville's place in Miami's built environment would continue as a source of enjoyment for the community.</p>

**TABLE 12: COMMENTS AND RESPONSES (CONTINUED)**

<b>Document ID</b>	<b>Topic Code</b>	<b>Comment</b>	<b>Response</b>
010B, 011A Individual	Purpose and Need	Stiltsville is historic, and protecting it is part of the park's mission (organic act quoted in comment). Similarly, commenters stated that Alternative D is counter to the mission of the park.	<p>The mission of Biscayne National Park is as follows:</p> <p>Conserve the rare combination of Florida coral reefs and keys, estuarine bay, mangrove coast, the wildlife, associated habitats, and the historic elements contained within them.</p> <p>Exemplify responsible stewardship and fosters responsibility and stewardship within others.</p> <p>Enable visitors to experience tranquility, scenic vistas, compatible recreation, and the underwater environment.</p> <p>The preferred alternative was selected based on an evaluation of the ability of the alternatives considered in the draft and final environmental impact statement to support the fulfilling of this mission.</p> <p>Although Stiltsville does not meet the criteria necessary to be placed on the National Register of Historical Places, as noted in the previous response, the analysis of environmental consequences in the draft and final environmental impact statement evaluates the benefits of protecting Stiltsville for presenting the site's unique history to visitors and of ensuring that the history of the site and nature of Stiltsville's place in Miami's built environment would continue as a source of enjoyment for the community.</p>

TABLE 12: COMMENTS AND RESPONSES (CONTINUED)

Document ID	Topic Code	Comment	Response
011B, 013A Individual	Alternatives	There is precedent in national parks for private residences that continue to be owned and/or leased by individuals who had them prior to the formation of the national park. Other commenters stated that returning the structures to their “private owners” should be considered.	<p>The former Stiltsville occupants are different from inholders in other parks. These individuals never had title to the bottom of the bay on which their houses were anchored. As leaseholders, they have a different set of legal rights from those of title owners. The leases that the individuals had were established by the State of Florida, and the National Park Service honored them until they expired.</p> <p>Regulations amending 36 CFR Part 19, which contains the authority for leasing and exchanging historic properties, were published in the <i>Federal Register</i> on December 27, 2001. The National Parks Omnibus Act authorizes the National Park Service to grant leases for use of buildings and associated property located within parks in addition to historic properties, but does not permit the leasing of non-historic land.</p> <p>However, 36 CFR Part 18 directs that leasing of property in national park units take place only through competitive bidding, unless the lease is issued to a non-profit organization or unit of government for uses that contribute to the purpose or programs of the park.</p> <p>An alternative that would include occupancy of the structures under short-term private leases is considered in the draft and final environmental impact statement and dismissed from further consideration.</p>

**TABLE 12: COMMENTS AND RESPONSES (CONTINUED)**

<b>Document ID</b>	<b>Topic Code</b>	<b>Comment</b>	<b>Response</b>
011C Individual	Alternatives	An alternative should be considered that treats each structure individually (i.e. a combination of alternatives).	The intent of the alternatives was to evaluate general management directions that could be followed at the Stiltsville site. The Advisory Committee recommended a range of feasible uses. A range of management alternatives was developed through the deliberations of the committee and from public input during scoping. The alternatives present possible uses for the structures but do not dictate specific uses for any given structure. This will be the responsibility of the non-profit organization, guided by the constraints established in the final environmental impact statement, and by NPS policy and state and federal laws that regulate use of sensitive natural resources.
016A Individual	Alternative D	Alternative D could be modified to include retention of a single structure to provide a presence in the northern part of the park, and to provide access for school groups and other organized groups.	Alternative D is the no action alternative, which is defined as the continuation of current management direction. The 1983 general management plan for the park called for the removal of the Stiltsville structures at the end of their leases in 1999.

APR-02-2003 09:00

NPS SE ARCH/FME/PLANNING

404 562 3257

P.02/03



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

FEB 11 2003

Linda Canzanelli  
Superintendent  
National Park Service  
Biscayne National Park  
9700 S.W. 328<sup>th</sup> Street  
Homestead, Florida 33033-5634

SUBJ: Draft Environmental Impact Statement and General Management Plan  
Amendment, Biscayne National Park, Florida

Dear Superintendent Canzanelli:

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U. S. Environmental Protection Agency (EPA) has reviewed the subject Draft Environmental Impact Statement (DEIS). The document provided impacts of management options for a small group of houses built on wooden pilings sunk into the shallow bottom areas of Biscayne Bay south of Miami in Miami-Dade County, Florida.

The first structure was built in the 1930's, and by the 1960's, the number had risen to 27; hurricanes and storms reduced the structures to 14 by 1976. In 1976 the State of Florida entered into agreements with private individuals or groups and provided leases for the submerged lands on which the structures stood. Hurricane Andrew irreparably damaged seven of the 14 structures, and in 1985, the submerged lands supporting the seven remaining structures, collectively referred to as "Stiltsville", were deeded to the federal government as part of the Biscayne National Park. The NPS honored the remaining leases until 1999, and is now considering alternative management plans for the Stiltsville structures. Four alternatives - including two preferred alternatives - provide for the future management of these buildings by the National Park Service (NPS).

Alternative A (Preferred Alternative): A non-profit organization would manage Stiltsville and allow public use; the organization would enter into a management agreement with the NPS that would provide public use of the seven Stiltsville structures, consistent with NPS policies. Renovation costs, to be borne by the lessee, are estimated to range from \$200,000 to \$500,000 per structure.

Alternative B: NPS would develop and manage Stiltsville to provide for public use. NPS would provide repairs, development, management and maintenance of the seven Stiltsville structures, with uses to be the same as for Alternative A, that is, providing public access and use consistent with NPS policy

APR-02-2003 09:00

NPS SE ARCH/FME/PLANNING

404 562 3257

P.03/03

Alternative C (Second Preferred Alternative): If an acceptable non-profit organization cannot be found, NPS would encourage competitive leasing to provide for public and private use consistent with NPS policies. The new leaseholder(s) would be responsible for renovation and maintenance costs.

Alternative D: The "No Action" Alternative is to remove the Stiltsville structures. At the end of the Special Use Permit or any extension of that agreement, NPS would require the implementation of the provision contained in the non-renewal leases requiring removal of all man-made structures from Biscayne National Park. Costs to demolish and remove materials would range from \$100,000 to \$150,000 per structure.

EPA supports NPS in selecting either Alternative A - assuming an acceptable non-profit group can be found - or Alternative C - lease competitively to private groups - if A is not feasible. Both of these alternatives would relieve NPS the burden of upkeep and maintenance of these properties and allow their use by the public. One cannot help but wonder how long these structures will survive given their precarious location in a region well-known for destructive tropical storms.

Regardless of which alternative is selected, the presence of the Stiltsville structures situated above-water raises several environmental questions related to sewage and trash disposal. Removal of waste water is by pumping and transport to an on-shore waste water treatment facility will be required. What measures are in place to protect Park resources and the health of the public from improper wastewater handling causing wastewater spills? EPA is also concerned about trash containing plastic materials being scattered by scavenging sea birds and ultimately ending up in the water where trash may be ingested by sea turtles and other marine species (ingestion of plastic waste can be lethal to sea turtles). What management strategies will prevent scavenging from trash receptacles by sea birds?

In summary, EPA supports NPS's two action alternatives and rates this DEIS "LO", Lack of Objections, that is, the EPA review has not identified any potential environmental impacts requiring substantive changes in the proposal; however, clarification of the plans for wastewater and trash management would improve the final EIS. Thank you for the opportunity to comment of this document. If you have any questions please contact John Hamilton of my staff at (404) 562-9617.

Sincerely,

Heinz J. Mueller, Chief  
Office of Environmental Assessment

Internet Address (URL) = <http://www.epa.gov>

Please recycle materials. A 50 percent reduction in paper is required by law.

APR-02-2003 09:00

404 562 3257

03

03

03

03

03

03

TOTAL P.03



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Southeast Regional Office  
9721 Executive Center Drive North  
St. Petersburg, Florida 33702

February 13, 2003

Linda Canzanelli, Superintendent  
National Park Service, Biscayne National Park  
9700 S.W. 328<sup>th</sup> Street  
Homestead, Florida 33003-5634

Dear Ms. Canzanelli:

The National Marine Fisheries Service (NOAA Fisheries) has reviewed the General Management Plan Amendment for Stiltsville/Draft Environmental Impact Statement (GMPA/DEIS). The project site is located within the boundary of Biscayne National Park (BNP) in Dade County, Florida. Four alternatives are examined. Alternative A (Proposed Action) would involve creation of a non-profit entity that would "develop, manage, and maintain the seven existing Stiltsville structures to provide broad public access and diversity of use consistent with National Park Service policy and best management practices for environmental protection" (GMPA/DEIS, p. vi). Alternative B is similar to Alternative A in terms of how the structures would be utilized. However, BNP would be responsible for the management, renovation, and general operation of the structures under this alternative. Alternative C would entail competitive leasing of the structures for private use and the National Park Service would issue, approve, monitor, and enforce the leasing program. Alternative D (No Action Alternative) would require implementation of the provision contained in all the non-renewable leases at Stiltsville that call for removal of all man-made structures from Biscayne National Park.

The Stiltsville area contains areas identified as Essential Fish Habitat (EFH) by the South Atlantic Fishery Management Council (SAFMC). Categories of EFH found in this area may include seagrasses, the marine water column, hard bottom communities, and coral and coral reefs. Federally managed species associated with the marine water column include eggs and sub-adult brown and pink shrimp; gag and yellowedge grouper; gray, mutton, lane, and schoolmaster snappers; and white grunt. The marine water column has also been identified as EFH for pelagic species, including sub-adult/juvenile king and Spanish mackerel, greater amberjack, cobia, and dolphin. Federally managed species associated with submerged aquatic vegetation (e.g., seagrasses) include postlarval, juvenile, and adult gray, lane, and schoolmaster snappers; juvenile Goliath grouper and mutton snapper; and adult white grunt. Hard bottom/coral reef habitats have been identified as EFH for juvenile and adult gag and yellowedge groupers, and gray and mutton snappers. Sponge, algae, coral, and hardbottom habitats have been identified as EFH for juvenile and adult spiny lobster. Hard bottom communities within the South Atlantic region also have been identified as Habitat Areas of Particular Concern (HAPC) for the snapper/grouper complex and spiny lobster. Moreover, Biscayne Bay and Biscayne



National Park have been designated by the SAFMC as HAPC. HAPCs are subsets of EFH that are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area.

NOAA Fisheries supports the implementation of Alternative D, which would involve the removal of the Stiltsville structures. We concur with the determination, as stated in the GMPA/DEIS (p. ix), that with implementation of Alternative D, "bay resources such as seagrass beds that have been disturbed or degraded by the long-term presence of the structures would be restored or, where feasible, allowed to return naturally." Moreover, secondary and indirect impacts to EFH associated with vessel usage concentrated within the area of Stiltsville would likely be minimized if the structures were removed. For example, boat groundings, propeller scarring, accidental fuel leakage, and improper disposal of waste are just some of the secondary and indirect impacts that would be eliminated or reduced subsequent to removal of the structures.

Based on the preceding, NOAA Fisheries concurs with BNP's determination that Alternative D is the environmentally preferred alternative (GMPA/DEIS, p. 38). The environmentally preferred alternative is defined by the Council on Environmental Quality (1978) as the alternative that best meets the criteria or objectives set out in Section 101 of the National Environmental Policy Act. Alternative D attains the widest range of beneficial uses of the environment, natural and cultural preservation, and visitor safety and enjoyment, without degradation of resources (GMPA/DEIS, p. 38).

Finally, the project area includes known distribution limits of Federally listed threatened species that are under purview of NOAA Fisheries. In accordance with the Endangered Species Act of 1973, as amended, it is the responsibility of the appropriate Federal regulatory agency to review its activities and programs and identify any activity or program that may affect endangered or threatened species or their habitat. Determinations involving species under NOAA Fisheries jurisdiction should be reported to our Protected Resources Division (PRD) at the letterhead address. If it is determined that the activities may adversely affect any species listed as endangered or threatened and under PRD purview, then formal consultation must be initiated.

We appreciate the opportunity to provide these comments. Related correspondence should be addressed to the attention of Ms. Audra Livergood at our Miami Office. She may be reached at 11420 North Kendall Drive, Suite #103, Miami, Florida 33176, or by telephone at (786) 263-0028.

Sincerely,

*Rickey N. Ruebsamen*

*for*

Rickey N. Ruebsamen  
Acting Assistant Regional Administrator  
Habitat Conservation Division

P. 002/004

8437628700

FEB-13-2003 THU 03:30 PM NATIONAL OCEAN SERVICES

P. 003/004

8437628700

FEB-13-2003 THU 03:30 PM NATIONAL OCEAN SERVICES

cc:  
EPA, Atlanta  
EPA, West Palm Beach  
DEP, West Palm Beach  
FWCC, Tallahassee  
FWS, Vero Beach  
F/SER45, Charleston  
F/SER45-Livergood



IDE90511@aol.com  
02/09/03 02:36 PM  
EST

To: BISC\_Stiltsville@nps.gov  
cc:  
Subject: (no subject)

I am in favor of keeping the houses as they are . Forming a cooperative effort with the current occupants maintaining them and sharing the experience with various groups. I feel that under the NPS funding backlog they will fall into further disarray.

Collette R. Ide  
905 SW Coconut Drive  
Ft. Lauderdale, Fl. 33315

P. 004/004

28437628700

FEB-13-2003 THU 03:31 PM NATIONAL OCEAN SERVICES



**SOUTH FLORIDA WATER MANAGEMENT DISTRICT**

3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045 • TDD (561) 697-2574  
Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680 • www.sfwmd.gov

GOV 04-14

January 31, 2003

Ms. Cindy Cranick  
Florida State Clearinghouse  
Florida Dept. of Environmental Protection  
3900 Commonwealth Blvd., MS 47  
Tallahassee, FL 32399-3000

Dear Ms. Cranick:

**Subject: Stiltsville General Management Plan Amendment/Draft Environmental Impact Statement - Biscayne National Park [SA#: FL200212263249C]**

In response to your request, South Florida Water Management District (SFWMD) staff has reviewed the General Management Plan Amendment (GMPA)/Draft Environmental Impact Statement (DEIS) for the above-referenced proposal for consistency with the Florida Coastal Zone Management Program (FCMP). The purpose of the GMPA/DEIS is to evaluate the effects of several alternatives for the long-term management of the Stiltsville area to ensure the protection of resources and public safety while allowing a range of recreational opportunities to support visitor needs.

Projects reviewed by the SFWMD pursuant to the FCMP are reviewed for consistency with the provisions of Chapter 373, F.S. (Florida Water Resources Act of 1972, as amended), as well as the programs and regulations developed thereunder. Chapter 373, F.S. authorizes the SFWMD to regulate the withdrawal, diversion, storage, and consumptive uses of water, the construction and operation of stormwater management systems, and work in, on, or over surface waters or wetlands. Chapter 373, F.S. also authorizes the SFWMD to acquire and manage land, to conduct research and investigations into all aspects of water resource management, and to disseminate information relating to the water resources of the state to public and private users.

After review of the GMPA/DEIS, the SFWMD offers the following comments and recommendations:

- (1) Alternatives A, B, and C should include an active monitoring program to verify that the environment is not being harmed. The monitoring program should include visuals of the water (for litter, spills, damage to habitats, etc.), water quality sampling and analysis, trending analysis of data, determination if harm is occurring, and quarterly reports.

**GOVERNING BOARD**

Trudi K. Williams, P.E., Chair  
Lennart E. Lindahl, P.E., Vice-Chair  
Pamela Brooks-Thomas

Michael Collins  
Hugh M. English  
Gerardo B. Fernández

Patrick J. Gleason, Ph.D., P.G.  
Nicolás J. Gutiérrez, Jr., Esq.  
Harkley R. Thornton

**EXECUTIVE OFFICE**

Henry D. ...  
...

Ms. Cindy Cranick  
January 31, 2003  
Page 2

- (2) An additional alternative should be considered (Alternative E) that would allow the structures to remain under the existing process of managing the use of the structures under the special use permits that would limit use exclusively to individuals and organizations that held leases and their guests. Issues to be addressed under this alternative would include potential environmental impacts and the need to repair the existing structures to protect the health and safety of those receiving permits.
- (3) An additional alternative should be considered (Alternative F) that leaves the level of use as is, providing for only those necessary repairs that would protect public health and safety. Under this alternative, the restrictions under Protecting Park Resources could also be applied.

If you have any questions concerning the above or if I can be of further assistance, please do not hesitate to contact me at (561) 682-6862.

Sincerely,

James J. Golden, AICP  
Senior Planner  
Environmental Resource Regulation

/s/

c: Linda Canzanelli, BNP

RECEIVED  
FEB 03 2003  
DIPOLGA



South  
Florida  
Regional  
Planning  
Council



January 24, 2003

Ms. Cindy Cranick  
Florida Clearinghouse Coordinator  
Florida Department of Environmental Protection  
3900 Commonwealth Boulevard, Mail Station 47  
Tallahassee, FL 32399-3000

RE: SFRPC #03-0105, SA1 #FL200212263249C – Request for comments on the General Management Plan Amendment/Draft Environmental Impact Statement for the Stiltville Management Feature of Biscayne National Park, Department of the Interior, National Park Service, Miami-Dade County.

Dear Ms. Griffin:

We have reviewed the above-referenced request and have the following comments:

- The preferred Alternative A is generally consistent with the goals and policies of the Strategic Regional Policy Plan for South Florida (SRPP).
- The location of this project is within the Biscayne Bay Surface Water Improvement and Management (SWIM) area, and Biscayne National Park, natural resources of regional significance, designated in the *Strategic Regional Policy Plan for South Florida* (SRPP). The goals and policies of the SRPP, in particular those indicated below, should be observed when making decisions regarding this project.

#### Strategic Regional Goal

- 3.1 Eliminate the inappropriate uses of land by improving the land use designations and utilize land acquisition where necessary so that the quality and connectedness of Natural Resources of Regional Significance and suitable high quality natural areas is improved.

#### Regional Policies

- 3.1.1 Natural Resources of Regional Significance and other suitable natural resources shall be preserved and protected. Mitigation for unavoidable impacts will be provided either on-site or in identified regional habitat mitigation areas with the goal of providing the highest level of resource value and function for the regional system. Endangered faunal species habitat and populations documented on-site shall be preserved on-site. Threatened faunal species and populations and species of special concern documented on-site, as well as critically imperiled, imperiled and rare plants shall be preserved on-site unless it is demonstrated that off-site mitigation will not adversely impact the viability or number of individuals of the species.
- 3.1.2 Direct inappropriate uses of land that are not consistent with the protection and maintenance of natural resource values away from Natural Resources of Regional Significance and suitable natural resource areas.

3440 Hollywood Boulevard, Suite 140, Hollywood, Florida 33021  
Broward (954) 985-4416, State (800) 985-4416  
SunCom 473-4416, FAX (954) 985-4417, Sun Com FAX 473-4417  
email: sfadmin@sfrpc.com, website: www.sfrpc.com

RECEIVED  
JAN 29 2003  
OIP/OLGA

Ms. Lynn Griffin  
January 24, 2003  
Page 2

- 3.1.9 Degradation or destruction of Natural Resources of Regional Significance, including listed species and their habitats will occur as a result of a proposed project only if:

- a) the activity is necessary to prevent or eliminate a public hazard, and
- b) the activity is in the public interest and no other alternative exists, and
- c) the activity does not destroy significant natural habitat, or identified natural resource values, and
- d) the activity does not destroy habitat for threatened or endangered species, and
- e) the activity does not negatively impact listed species that have been documented to use or rely upon the site.

#### Strategic Regional Goal

- 3.5 Develop a plan for public access that delineates the Natural Resources of Regional Significance and high quality natural areas compatible with human recreation and promotes the ecologically sensitive use of suitable Natural Resources of Regional Significance.

#### Regional Policies

- 3.5.1 Identify the elements of each Natural Resource of Regional Significance and other suitable natural resources of the region and implement protection, restoration, and management of these elements that encourages public use. This shall include the identification of suitable additional beach access areas that allow for effective public transportation and private vehicle parking. Such needs shall be addressed by the incorporation of shared use parking areas and public transportation pick-up and drop-off points.
- 3.5.2 Provide resource protection, restoration and management plans to the public to encourage implementation and use of the necessary protection elements in the course of public site use.
- 3.5.3 Require the ecologically sensitive use of natural areas as a condition to access and utilization. Promote environmental education through parks, nature centers and schools.
- 3.5.4 Identify the appropriate access and use criteria for the identified Natural Resources of Regional Significance and adjacent natural buffer areas.

#### Strategic Regional Goal

- 3.8 Enhance and preserve natural system values of South Florida's shorelines, estuaries, benthic communities, fisheries, and associated habitats, including but not limited to, Florida Bay, Biscayne Bay and the coral reef tract.

#### Regional Policies

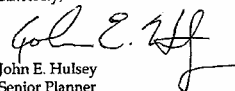
- 3.8.1 Enhance and preserve natural shoreline characteristics through requirements resulting from the review of proposed projects and in the implementation of ICE, including but not limited to, mangroves, beaches and dunes through prohibition of structural shoreline stabilization methods except to protect existing navigation channels, maintain reasonable riparian access, or allow an activity in the public interest as determined by applicable state and federal permitting criteria.

Ms. Lynn Griffin  
January 24, 2003  
Page 3

- 3.8.2 Enhance and preserve benthic communities, including but not limited to seagrass and shellfish beds, and coral habitats, by allowing only that dredge and fill activity, artificial shading of habitat areas, or destruction from boats that is the least amount practicable, and by encouraging permanent mooring facilities. Dredge and fill activities may occur on submerged lands in the Florida Keys only as permitted by the Monroe County Land Development Regulations. It must be demonstrated pursuant to the review of the proposed project features that the activities included in the proposed project do not cause permanent, adverse natural system impacts.
- 3.8.3 As a result of proposed project reviews, include conditions that result in a project that enhances and preserves marine and estuarine water quality by:
- a) improving the timing and quality of freshwater inflows;
  - b) reducing turbidity, nutrient loading and bacterial loading from wastewater facilities and vessels;
  - c) reducing the number of improperly maintained stormwater systems; and
  - d) requiring port facilities and marinas to implement hazardous materials spill plans.
- 3.8.4 Enhance and preserve commercial and sports fisheries through monitoring, research, best management practices for fish harvesting and protection of nursery habitat and include the resulting information in educational programs throughout the region. Identified nursery habitat shall be protected through the inclusion of suitable habitat protective features including, but not limited to:
- a) avoidance of project impacts within habitat area;
  - b) replacement of habitat area impacted by proposed project; or
  - c) improvement of remaining habitat area within remainder of proposed project area.
- 3.8.5 Enhance and preserve habitat for endangered and threatened marine species by the preservation of identified endangered species habitat and populations. For threatened species or species of critical concern, on-site preservation will be required unless it is demonstrated that off-site mitigation will not adversely impact the viability or number of individuals of the species.

Thank you for the opportunity to comment. We would appreciate being kept informed on the progress of this project. Please do not hesitate to call if you have any questions or comments.

Sincerely,

  
John E. Hulsey  
Senior Planner

JEH/th

cc: Lynn Griffin, FCMP



Jeb Bush  
Governor

## Department of Environmental Protection

Marjory Stoneman Douglas Building  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399-3000

David B. Struhs  
Secretary

February 7, 2003

Ms. Linda Canzanelli, Superintendent  
Biscayne National Park  
9700 S. W. 328<sup>th</sup> Street  
Homestead, Florida 33033-5634

Re: National Park Service, General Management Plan Amendment, Draft Environmental Impact Statement, Stiltsville Management, Biscayne National Park, Miami-Dade County, Florida

SAI: FL200212263249C

Dear Ms. Canzanelli:

The Florida State Clearinghouse, pursuant to Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated the review of the above-referenced draft environmental impact statement (DEIS) for the proposed project.

The South Florida Water Management District (SFWMD) recommends that alternatives A, B, and C should include an active monitoring program to verify that the environment is not being harmed. Further, the district recommends that at least two additional alternatives should be considered, including one that limits use of the facilities to the existing lease holders and their guests, and one that leaves the level of use at its current level, providing only those repairs that would protect public health and safety. Please see the enclosed letter from the SFWMD for additional details.

The South Florida Regional Planning Council (SFRPC) states that Alternative A, the preferred alternative, is generally consistent with the goals and policies of its Strategic Regional Policy Plan and has summarized the relevant goals and policies that apply to this project. Please see the attached comments from the SFRPC and specific recommendations on complying with permitting requirements.

The Department of Environmental Protection (DEP) recommends that the existing structures not be expanded, and that domestic and hazardous wastes be handled appropriately. Wastewater storage systems need to be employed along with back up systems to prevent contaminated spills. All work related to this project will require an environmental resource permit. Please see enclosed DEP comments for additional recommendations.

"More Protection, Less Process"

Printed on recycled paper.

BISC:02-13-03:ea.

Ms. Linda Canzanelli  
February 7, 2003  
Page 2

Based on the information contained in the DEIS and the comments provided by our reviewing agencies, as summarized above and enclosed, the state has determined that, at this stage, the above-referenced project is consistent with the Florida Coastal Management Program (FCMP). All subsequent environmental documents prepared for this project must be reviewed to determine the project's continued consistency with the FCMP. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews.

Thank you for the opportunity to review this project. If you have any questions regarding this letter, please contact Mr. Bob Hall at (850) 245-2163.

Sincerely,

*Sally B. Mann*

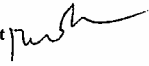
Sally B. Mann, Director  
Office of Intergovernmental Programs

SBM/rwh  
Enclosures

cc: Jim Golden, SFWMD  
John E. Hulsey, SFRPC  
Tim Rach, DEP, SED

# Memorandum

## Florida Department of Environmental Protection

TO: Florida State Clearinghouse  
FROM: Robert W. Hall, Environmental Specialist   
Office of Intergovernmental Programs  
DATE: February 7, 2003  
PROJECT: National Park Service, General Management Plan Amendment/Draft  
Environmental Impact Statement, Stitsville Management, Biscayne National Park,  
Miami-Dade County, Florida  
SAI: FL200212263249C

The Department has reviewed the above-referenced project and the two major concerns are the protection of the surrounding submerged resources and the potential water quality degradation from use of the facilities.

Whether the structures are removed or rehabilitated, this work will require an Environmental Resource Permit. The proposed work needs to minimize impacts to the submerged vegetation both in accessing the structures and for any in-water or over-water work. Shallow draft vessels should be required in order to avoid disturbing the submerged bottom. Turbidity curtains should be used where necessary to minimize turbidity and related water quality impacts.

If the structures are to be maintained, then it is critical to protect the surrounding submerged resources by establishing proper routes to and from the sites, and to determine appropriate vessel drafts that can safely access the sites. Domestic and hazardous wastes need to be handled appropriately. Appropriate wastewater storage systems should be employed along with back up systems to prevent any spills. Adequate and frequent inspections should take place while the sites are occupied to ensure that the facilities are working properly and that the patrons are following any established policies and procedures that are designed to protect the resources.

The footprints of the existing structures should not be expanded, which will reduce the possibility of new impacts.

COUNTY: MIAMI-DADE

DATE: 12/26/02

COMMENTS DUE DATE: 1/24/03

CLEARANCE DUE DATE: 2/6/03

Message:

SAI#: FL200212263249C

## STATE AGENCIES

## WATER MNGMNT. DISTRICTS

## OPB POLICY UNITS

AGRICULTURE  
☒ OTTED  
 COMMUNITY AFFAIRS  
 FISH and WILDLIFE COMMISSION  
 STATE  
 TRANSPORTATION  
 ENVIRONMENTAL PROTECTION

## SOUTH FLORIDA WMD

## ENVIRONMENTAL POLICY UNIT

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

- Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.
- ☒ Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.
- Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.
- Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

## Project Description:

National Park Service - General Management Plan Amendment/Draft Environmental Impact Statement - St. Johns River Management - Biscayne National Park - Miami-Dade County, Florida. On-line at: [www/nps.gov/bisc/stjohns/stjohnsdocuments.htm](http://www/nps.gov/bisc/stjohns/stjohnsdocuments.htm)

RECEIVED

JAN 13 2003

OIP/OLGA

To: Florida State Clearinghouse

EO. 12372/NEPA

Federal Consistency

AGENCY CONTACT AND COORDINATOR (SCH)

2555 SHUMARD OAK BLVD

TALLAHASSEE, FLORIDA 32399-2100

(850) 414-6580 (SC 994-6580)

(850) 414-0479

- ☒ No Comment  
☐ Comment Attached  
☐ Not Applicable

- ☒ No Comment/Consistent  
☐ Consistent/Comments Attached  
☐ Inconsistent/Comments Attached  
☐ Not Applicable

From:

Division/Bureau: OTTED

Reviewer: M. Blahut

Date: 1/6/03

COUNTY: MIAMI-DADE

DATE: 12/26/02

COMMENTS DUE DATE: 1/24/03

CLEARANCE DUE DATE: 2/6/03

Message:

SAI#: FL200212263249C

## STATE AGENCIES

## WATER MNGMNT. DISTRICTS

## OPB POLICY UNITS

AGRICULTURE  
☐ OTTED  
 COMMUNITY AFFAIRS  
 FISH and WILDLIFE COMMISSION  
 STATE  
☒ TRANSPORTATION  
 ENVIRONMENTAL PROTECTION

## SOUTH FLORIDA WMD

## ENVIRONMENTAL POLICY UNIT

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

- Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.
- ☒ Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.
- Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.
- Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

## Project Description:

National Park Service - General Management Plan Amendment/Draft Environmental Impact Statement - St. Johns River Management - Biscayne National Park - Miami-Dade County, Florida. On-line at: [www/nps.gov/bisc/stjohns/stjohnsdocuments.htm](http://www/nps.gov/bisc/stjohns/stjohnsdocuments.htm)

RECEIVED

JAN 07 2003

OIP/OLGA

To: Florida State Clearinghouse

EO. 12372/NEPA

Federal Consistency

AGENCY CONTACT AND COORDINATOR (SCH)

2555 SHUMARD OAK BLVD

TALLAHASSEE, FLORIDA 32399-2100

(850) 414-6580 (SC 994-6580)

(850) 414-0479

- ☒ No Comment  
☐ Comment Attached  
☐ Not Applicable

- ☐ No Comment/Consistent  
☐ Consistent/Comments Attached  
☐ Inconsistent/Comments Attached  
☐ Not Applicable

From:

Division/Bureau: PF DOT

Reviewer: Sandra H. Hester

Date: 1/3/03

Granted Extension Page 1 of 1

MyFlorida.com   help | 411 | feedback | directory

☒ email Governor Job Bush  
☐ Gov. Bush's E-Newsletter

**STATE CLEARINGHOUSE**  
Home > [My In-Box](#) > [Search Project](#) > **Granted Extension**  
User: CINDY CRANICK, Clearinghouse

**Project Information**  
Project: FL200212263249C  
Description: National Park Service - General Management Plan Amendment/Draft Environmental Impact Statement - Stiltsville Management - Biscayne National Park - Miami-Dade County, Florida. On-line at: [www.nps.gov/bisc/stiltsville/stiltsvilledocuments.htm](http://www.nps.gov/bisc/stiltsville/stiltsvilledocuments.htm)  
Keywords: NPS - GMP Amend/DEIS- Stiltsville - Miami-Dade Co.  
Program:  
Agency: SOUTH FLORIDA WMD  
Date: 01/31/2003  
Extension: Our CERP staff looked at this and it appears that we may have some comments. Since they are going to be out of the office most of next week, they asked me to request a one week extension to 1/31/03.  
Description:  
Date Granted: 01/21/2003

Copyright© 2000 State Of Florida  
Privacy Statement

Add Agency Comments Page 1 of 1

MyFlorida.com   help | 411 | feedback | directory

☒ email Governor Job Bush  
☐ Gov. Bush's E-Newsletter

**STATE CLEARINGHOUSE**  
Home > [My In-Box](#) > [Search Project](#) > **Add Agency Comments**  
User: Bob Hall, , ENVIRONMENTAL PROTECTION

**Project Information**  
Project: FL200212263249C  
Description: National Park Service - General Management Plan Amendment/Draft Environmental Impact Statement - Stiltsville Management - Biscayne National Park - Miami-Dade County, Florida. On-line at: [www.nps.gov/bisc/stiltsville/stiltsvilledocuments.htm](http://www.nps.gov/bisc/stiltsville/stiltsvilledocuments.htm)  
Keywords: NPS - GMP Amend/DEIS- Stiltsville - Miami-Dade Co.  
Program:

**Review Comments** Page:    Page 4 / 10

Reviewer: FISH and WILDLIFE COMMISSION  
Date: 01/09/2003  
Description: NC by Brian Barnett  
Comment  
Type: ☐ Draft ☒ Final

Copyright© 2000 State Of Florida  
Privacy Statement

[http://www.flor.../pr\\_project\\_comments.asp?type=C&id=FL200212263249C&value=4&total=1](http://www.flor.../pr_project_comments.asp?type=C&id=FL200212263249C&value=4&total=1) 2/7/03

Add Agency Comments

Page 1 of 1


[help](#) | [411](#) | [feedback](#) | [directory](#)

- ☒ email Governor Jeb Bush  
☐ Gov. Bush's E-Newsletter

**STATE CLEARINGHOUSE**

[Home](#) > [My In-Box](#) > [Search Project](#) > [Add Agency Comments](#)  
 User: Bob Hall, , ENVIRONMENTAL PROTECTION

**Agency**

[Home](#)  
[My In-Box](#)  
[Search Project](#)  
[Help](#)

**Public Area**

[Brochure](#)  
[Manual](#)

**Project Information**

Project: FL200212263249C  
 Description: National Park Service - General Management Plan  
 Amendment/Draft Environmental Impact Statement -  
 Stiltsville Management - Biscayne National Park - Miami-  
 Dade County, Florida. On-line at:  
[www.nps.gov/bisc/stiltsville/stiltsvilledocuments.htm](http://www.nps.gov/bisc/stiltsville/stiltsvilledocuments.htm)  
 Keywords: NPS - GMP Amend/DEIS- Stiltsville - Miami-Dade Co.  
 Program:

Review Comments		Page:	600	1	2	3	4	5	6	7	8	9	10
Reviewer:	OTTED												
Date:	01/06/2003												
Description:	NO COMMENT.												
Comment													
Type:	<input type="radio"/> Draft <input checked="" type="radio"/> Final												

Copyright© 2000 State Of Florida  
[Privacy Statement](#)

[http://www.flor.../pr\\_project\\_comments.asp?type=C&id=FL200212263249C&value=5&total=1](http://www.flor.../pr_project_comments.asp?type=C&id=FL200212263249C&value=5&total=1) 2/7/03

Add Agency Comments

Page 1 of 1


[help](#) | [411](#) | [feedback](#) | [directory](#)

- ☒ email Governor Jeb Bush  
☐ Gov. Bush's E-Newsletter

**STATE CLEARINGHOUSE**

[Home](#) > [My In-Box](#) > [Search Project](#) > [Add Agency Comments](#)  
 User: Bob Hall, , ENVIRONMENTAL PROTECTION

**Agency**

[Home](#)  
[My In-Box](#)  
[Search Project](#)  
[Help](#)

**Public Area**

[Brochure](#)  
[Manual](#)

**Project Information**

Project: FL200212263249C  
 Description: National Park Service - General Management Plan  
 Amendment/Draft Environmental Impact Statement -  
 Stiltsville Management - Biscayne National Park - Miami-  
 Dade County, Florida. On-line at:  
[www.nps.gov/bisc/stiltsville/stiltsvilledocuments.htm](http://www.nps.gov/bisc/stiltsville/stiltsvilledocuments.htm)  
 Keywords: NPS - GMP Amend/DEIS- Stiltsville - Miami-Dade Co.  
 Program:

Review Comments		Page:	600	1	2	3	4	5	6	7	8	9	10
Reviewer:	TRANSPORTATION												
Date:	01/07/2003												
Description:	NC												
Comment													
Type:	<input checked="" type="radio"/> Draft <input type="radio"/> Final												

Copyright© 2000 State Of Florida  
[Privacy Statement](#)

[http://www.flor.../pr\\_project\\_comments.asp?type=C&id=FL200212263249C&value=7&total=1](http://www.flor.../pr_project_comments.asp?type=C&id=FL200212263249C&value=7&total=1) 2/7/03

Hall, Bob

From: Latch, Mark  
Sent: Friday, January 24, 2003 2:22 PM  
To: Hall, Bob  
Subject: SAI FL02-3249C, NPS Stitsville Management

I reviewed the material contained if the referenced notice. The Division has "No Comments" at this time. We appreciate the opportunity to comment.

ml  
01/24

You may also provide comments by attending a public meeting. At the meetings you will have an opportunity to discuss the alternatives with park staff and provide comments.

The meeting dates and locations are:

Homestead - December 16, 2002 from 3pm to 8pm  
Keys Gate Golf & Tennis Club, 2300 Palm Drive

Miami - December 17, 2002 from 3pm to 8pm  
Renaissance Ballroom, 5910 SW 8 Street

A brief summary of the four alternatives:

The preferred alternative is Alternative A, Non-Profit Development and Management to Provide for Public Use. In this alternative one or more groups or individuals would create a non-profit (IRS 501 (C) (3)) organization that would enter into an agreement with the National Park Service to develop, manage, maintain and authorize the uses of the Stitsville structures to provide broad public access and diverse opportunities and activities. Under this alternative, Stitsville may also provide a visitor and interpretive center, research facilities, an artist-in-residence location, meeting space, or a satellite park office that would provide National Park Service presence in the northern part of the park.

In Alternative B, National Park Service (NPS) Development and Management to Provide for Public Use, the NPS would renovate, manage, operate and maintain the Stitsville structures to provide broad public access and diverse opportunities and activities.

In Alternative C, Competitive Leasing to Provide for Public and Private Use, the NPS would use its current authority to issue competitive leases for the structures. Efforts would be made during the leasing process to try and make sure that there was some public use of the structures but public use would not be guaranteed in this alternative. Potential lessees would compete for the right to lease the structures. The size of footprint of the structure would not be expanded.

Alternative D is the No Action Alternative. We are required by the National Environmental Policy Act to look at removal of the structures as an option. In this Alternative we would not take any action to change our current policy, as identified in the 1983 General Management Plan, and the structures would be removed.

We hope to see you at the public meetings.

Sincerely,

Linda Canzanelli  
Superintendent

17 JAN 03

WE VOTE FOR ALTERNATIVE B.  
THANK YOU!

LEIGH+GLANN SMITH  
5864 SW 76 ST  
MIAMI 33143  
3056675451

BISC: 1-22-03: ea



"Christian D. Keedy"  
<ckeedy@acg-law.com>  
12/23/02 02:02 PM  
EST

To: <BISC\_Stiltsville@nps.gov>  
cc:  
Subject: Stiltsville Public Comment

Stiltsville through out its existence, of which I have personal knowledge of the last 54 years, has been a symbol of the arrogance of a wealthy few, who built and maintained these structures on public land. I has been amazing to me how long this illegal behavior has been condoned, because the rich owners have, in exchange for political contributions, lobbied for their continued existence. Not one public dollar should be spent to keep or maintain these structures unless the Park Service wants to use one or more of the structures for law enforcement purposes. Otherwise they should be removed at the expense of the current lease holders.

Best regards,  
Christian D. Keedy.  
[ckeedy@juno.com](mailto:ckeedy@juno.com)



KOMOART@aol.com  
12/21/02 06:34 PM  
EST

To: BISC\_Stiltsville@nps.gov  
cc:  
Subject: Stiltsville's true future???

"Biscayne National Park Seeks Input on Stiltsville Plan."  
Of course, "Alternative D" is OUT! The State of Florida unanimously voted it "historic." The neighboring communities fully support "saving Stiltsville," as well as the people of South Florida and our World Visitors. There are 75,000 signed petitions to "save Stiltsville." Alternative D... structures removed should not even be an alternative, unless of course, the Park's ultimate goal has never changed. "There will be a Biscayne National Park without Stiltsville." If this is true, then our taxed paid monies have been truly wasted on your ploys.

The National Park Service Advisory Board was established by Congress in 1935 to advise the Director of the National Park Service and the Secretary of Interior on matters relating to the National Park Service and National Park System. The Stiltsville Advisory Board/Committee is a part of this system. On May 15, 2001 the Stiltsville Advisory Board recommended for "Alternative B" that the 50% rule (structures with more the 50% damage be removed) be waived regardless of management/ownership. December 2, 2002 there is nothing showing their recommendation. Why? Why? Why ?????

Quote from December 2, 2002 Biscayne National Park web site.  
<http://www.nps.gov/stiltsville/stiltsvilleDecember22002publicmeetingrelease.htm>

"We are required by the National Environmental Policy Act to look at the option to removing the structures." Canzanelli said. "This is described under Alternative D.  
NO ACTION. This Alternative we would not take any action to change our policy , as identified in the 1983 General Management Plan, and the structures would be removed." This tells me that the Park's ultimate plan has never changed.

The National Park Service has spent millions of our tax paid monies on Stiltsville, but not for Stiltsville and certainly not for the the public. BIG \$\$\$ went to BIG LEGAL FEES, WASHINGTON MEETINGS, public meetings, cost of creating an Advisory Board, publications, more meeting, paper work, etc. etc. .... and the list goes on. May 4, 2002 Stiltsville Advisory Meeting, Secretary of Interior Gail Norton's aide made this statement: "The National Park Service has a FIVE (5) BILLION DOLLAR backlog on maintenance and repairs." How can they afford Stiltsville????  
Artical (Miami Herald) National News "National parks falling into decline: shortages of funding, staff are cited." (2001 date unknown) So, why are we allowing the Park Service to waste our money "opening Stiltsville to the public when they can not even handle the repairs or upgrades on what already exist????? If Stiltsville were a "National Historic Landmark?

Stiltsville should be an "Historic Landmark."  
Three (3) times the National Registry of Historic Places turned down Stiltsville and yet the Advisory Committee recognizes it's as "historic and a landmark with VALUE." The National Register of Historic Places is overseen by the National Park Service and the Secretary of Interior. This appears to be an exteme  
"CONFLICT OF INTEREST!!!!" Especially, since this is the FIRST TIME any state unanimously VOTED IT HISTORIC!

Doreen J Komocar/William H. Englehard Sr/ William H. Engelhard Jr.



200 N.W 134th Street  
North Miami, Florida 33168  
komoart@aol.com  
305-685-2652

C.C. President, George Bush  
Senator, Alex Diaz de la Portilla  
Secretary of Interior, Gail Norton  
Governor of Florida, Jeb Bush  
Media releases . . . . .



KOMOBEB@aol.com  
12/20/02 11:20 AM  
EST

To: BISC Stiltsville@nps.gov  
cc: villalobos.alex.web@flsenate.gov  
Subject: stiltsville key biscayne florida gen. management plan

I have noticed that there is nothing mentioned about removing the 50% rule or to make stiltsville a landmark. I believe that the stiltsville advisory committee recommended both of these items. I personally along with most of the south floridians I have spoke with would like to see.p.s. I forgot to put my address on my last e-mail.komo 200 n. w. 134 street n. miami, fl 33168.  
e-mail komoart@aol.com



"Lutton, Don (Park & Rec.)"  
 <Lutton@miamidade.gov>  
 12/19/02 03:12 PM EST

To: "BISC\_Stiltsville@nps.gov" <BISC\_Stiltsville@nps.gov>  
 cc:  
 Subject: Stiltsville Comments

Superintendent Canzanelli:

The Stiltsville in Biscayne Bay is highly significant to Biscayne National Park and the South Florida community. It is a unique element that brings attention to the park and insight into the lifestyles of those who lived in South Florida when the homes were built during the depression and afterwards. As a one-of-a-kind feature, people from around the world are drawn to learn more about it and ultimately visit the park and experience the dynamic ecosystem of Biscayne Bay. Stiltsville also reflects the pioneering spirit of Miami's early residents and their inextricable link to the bay. According to the National Park System's Mission Statement, its purpose is to "conserve the scenery and the natural and historic objects... (and) leave them unimpaired for the enjoyment of future generations." With this in mind, there is no question of whether Stiltsville should stay or go, but, rather, how can it be better preserved and enjoyed by future generations. The process of determining a management plan for a unique situation like Stiltsville is certainly daunting, and you and your staff should be praised for your efforts thus far.

While one alternative listed in your Executive Summary for the General Management Plan Amendment (Alternative D- No Action- Removal of Structures) clearly goes against your mission statement as described above, there is another alternative that was not mentioned: continue to lease the structures to private individuals. While this alternative may not be the most popular with the NPS, it certainly is not without precedence. As I am sure you know, there are many instances of private residences within National Park boundaries that continue to be owned and/or leased by the individuals who had them prior to the formation of the National Park- as is the case with Stiltsville. This likely even occurs as closely as National Parks in the Everglades and Big Cypress, not to mention that it has occurred in the many and vast parks in the mid-west for generations. The alternative to continue leasing the structures may not be the best option, but since the current lessees are willing to maintain the structures at great personal cost, it may be the only option that would preserve the structures and vista that have become the inspiration of so many works of art, song and poetry by South Florida artists.

A more likely option may be a combination of alternatives in which each structure is dealt with separately. Perhaps Alternative A (Non-Profit Organization Development and Management) can be established individually for each structure where the current lease holders can form a Non-Profit organization and manage "their" stilt house within guidelines consistent with NPS policy.

Whatever management plan is accepted to operate the stilt houses, the only outcome of their removal would be disappointment in the community and a scar on the reputation of the NPS's high standards for preserving culturally historic structures.

Sincerely,

Donald C. Lutton

Florida Native

B.S. /M.S. Park Administration



JJUDE33333@aol.com  
12/13/02 10:18 AM  
EST

To: Bisc\_stiltsville@nps.gov, Albert@SmallCo.net, c.sea@att.net,  
basil@bellsouth.net, nancy88@bellsouth.net,  
mccabe@telocity.com, jolibois@eng.fiu.edu, amy.condon@tpl.org,  
palmbayb@.msn.com  
cc: pschwiep@abwc.com  
Subject: Re: Stiltsville alternatives

Dear Superintendent Canzanelli,

I appreciate the opportunity to comment on the planned alternatives. Although "A" would be satisfactory, it leaves the management and maintenance more open to local political pressures. I feel that Alternative "B", putting the development and management to provide for public use by the NPS, would be the most appropriate. Since the structures should be preserved and need be available for all citizens, it would only be appropriate that the renovation, management, operation and maintenance be by a national taxpayer funded organization, i.e. the National Park Service. It would certainly, with the least affected by outside pressures, be able to provide broad public access and opportunities and activities. Also the NPS has a history of similar structure use in other inholdings in other National Parks.

James R. Jude  
200 Edgewater Drive  
Coral Gables FL 33133-6622  
Telephone: 305-6 Outward Bound - Home Page 67-3233 Fax: 305-667-4824 e-mail:  
jjude33333@aol.com

John Eastman  
4801 SW 188<sup>th</sup> Avenue  
Southwest Ranches, Florida 33332  
954-252-0937  
[john426@stis.net](mailto:john426@stis.net)

December 13, 2002

National Park Service  
Superintendent  
Biscayne National Park  
9700 SW 328<sup>th</sup> Street  
Homestead, Florida 33033-5634

RE: Stiltsville

This is a reply to your letter to me dated December 09, 2002. I am a fourth generation Miami area resident. Five generations of my family have enjoyed the ocean and related activities. We were active long before your park came. I am not an owner of any Stiltsville structure. I have boated and co-existed with Stiltsville for 43 years.

Like a cancer your park has expanded its borders northward. Stiltsville was annexed during one of your (unconstitutional) land grabs. This private property was unlawfully taken from its owners. Now some law requires you to get public comment to justify your criminal act. Well you asked for it....

Proposals A-D are not my choice. What I recommend is to return these structures to their private owners. Let the private owners manage and maintain these remaining structures. Allow public access to the structures by appointment or reservation. Boy Scouts, biology students, research, ect. Private groups should also have a chance to reserve and use the structures for a reasonable fee.

Anything the government does is done at 3x the cost and takes 3x as long. Park management for Stiltsville would be a disaster. Remember those \$1,000,000 out houses the park service built. Just imagine the potential waste for this project.

If you don't return the structures to the owners then remove them! I don't want one dollar of my tax money going to maintain them.

John Eastman

BISC: 12-18-02:ea.

# NATIONAL PARKS CONSERVATION ASSOCIATION

*Protecting Parks for Future Generations*

February 13<sup>th</sup>, 2003

Superintendent Linda Canzanelli  
Biscayne National Park  
9700 SW 328<sup>th</sup> Street  
Homestead, FL 33033-5634  
[Bisc\\_stiltsville@nps.gov](mailto:Bisc_stiltsville@nps.gov)  
305-230-1144

**Supplemental Comments on Biscayne National Park General Management Plan Amendment Draft Environmental Impact Statement, 67 Fed. Reg. 232 pp. 71980-71981.**

Dear Superintendent Canzanelli:

On behalf of the National Parks Conservation Association, thank you for the opportunity to comment on the proposed Stiltsville General Management Plan Amendment/Draft Environmental Impact Statement (GMPA/DEIS) referenced above. NPCA is a private, non-profit organization dedicated to the preservation and enhancement of the National Park System. NPCA has nine regional offices, including one in Florida, and over 300,000 members nationwide. Paul Schwiap has submitted comments on behalf of NPCA and we incorporate that letter by reference. Below are some supplemental comments that address some additional points and further discuss some of our major concerns.

As stated in our referenced letter, NPCA supports the preferred alternative, with several caveats. Although this is not the ideal solution, we recognize that it is the result of protracted, open discussions and represents an acceptable compromise.

NPCA is a plaintiff in a lawsuit against the National Park Service that challenges the extensions of the exclusive occupancy rights granted to the private permittees (*NPCA and Tropical Audubon Society v. Gale Norton, et al.* 11<sup>th</sup> Cir., Case No. 02-10555FF). We consider this an important side issue that reflects our frustration with the approach that the National Park Service has taken to address the Stiltsville situation since the 25-year leases expired on July 1, 1999. The leases stated that upon expiration, "all rights of the Lessee to the use, occupancy, and possession of said land shall cease and terminate..." We feel that the difficulty and delay in devising a plan for Stiltsville was caused by the Park Service's failure to assert its rights to immediate use, occupancy and possession outlined in the leases. The standstill agreements gave the occupants misleading signals that they may be allowed to remain at Stiltsville indefinitely. This affected how the Park Service was able to conduct planning for Stiltsville.



Sun Coast Regional Office  
1909 Harrison Street • Suite 207 • Hollywood, FL 33020  
Telephone (954) 926-6327 • Fax (954) 921-7810

That said, our lawsuit does not affect our position regarding the ultimate disposition of Stiltsville addressed by the GMPA/EIS. While we think that the management solution could have been arrived at sooner and more easily, but we still support the proposed preferred alternative.

**Support for the Preferred Alternative**

In the best of all worlds, the Park Service would be managing, maintaining and operating their own possessions. The reason that we support this alternative is that it is a realistic alternative that will ensure the preservation of the structures without adding to the already overextended operations and maintenance (O & M) budget of the National Park Service. The non-profit organization is somewhat of an experiment, serving as a surrogate for the park in order to benefit the public, without increasing NPS's estimated \$4.9 billion O & M backlog. One of the main concerns expressed by the current occupants was that management by the Park Service would be tantamount to destroying the structures, since Stiltsville required constant upkeep and investment. A non-profit organization was a compromise alternative that would allow public access and use for Stiltsville without depending upon the Park Service for the funds.

The GMPA/DEIS lays out a framework within which the nonprofit organization would operate, and includes a range of options for the structures that will be considered by the nonprofit organization. These options include using the buildings for campsites, education facilities, research/science stations, meeting facilities, locations for artist-in-residence programs, and park-related administration. NPCA agrees that these options should be considered, but feels that the GMPA/DEIS should provide more guidance. There are several outstanding questions that must be addressed in order to ensure that the nonprofit organization is successful. Below are the considerations that we feel are critical.

**Improving the definition of the Stiltsville nonprofit organization's public purpose.** In the GMPA/DEIS, the general purpose for which the Stiltsville non-profit organization would be formed is to "provide broad public access and diversity of use consistent with National Park Service policy and best management practices for environmental protection." NPCA feels that this purpose should be changed slightly to de-emphasize the volume of access in favor of the fairness of the access, and to emphasize the enhancement of the park purposes, mission, and visitor quality. This the purpose could be re-crafted to something like:

To "**maintain the structures and to provide reasonable public access and diversity of use, prioritizing uses that enhance the purpose and mission of Biscayne National Park,** consistent with National Park Service policy and best management practices for environmental protection." (Suggested edits in bold).

The practical effect of this change is that the nonprofit organization would receive better direction. It would not be compelled by the mission statement to maximize public access. The "reasonable" factor would allow the nonprofit organization more flexibility, perhaps allowing it to experiment with less costly, less intensive and more administratively feasible uses. NPCA



Sun Coast Regional Office  
1909 Harrison Street • Suite 207 • Hollywood, FL 33020  
Telephone (954) 926-6327 • Fax (954) 921-7810

believes that visitor experiences in Biscayne can be enhanced by a reasonable public access program, but maximizing that access is not primary goal for managing Stiltsville. The overriding concern is not the amount of access for the public, but rather that the access is allocated fairly. Under the status quo, private exclusive occupants are the gatekeepers for public access. The new management arrangement must provide a fairer process administered by the non-profit association, with sideboards established by Park Service laws and policies.

Better Defining the Structure of the Non-Profit Organization. The GMPA/DEIS describes the general mission and possible public use options for the proposed non-profit organization, but does not include details about its content and functions. Our letter referenced in the first paragraph addresses our concerns about diversity and representation. A third issue is resolution of the extent of the current Stiltsville occupants' control and participation in the nonprofit association. We have a few observations related to this.

During the discussions for the stakeholder mediation process, one of the current occupants suggested that it was reasonable to create a trust run by the current occupants (Minutes, Stiltsville Advisory Committee meeting, May 5<sup>th</sup> 2002, p 97). While the current occupants might indeed be able to provide the public access and negotiate fair visitor use arrangements, it would not satisfy the necessity for ethnic diversity, nor would it adequately represent the Park Service and other public interests. Such an arrangement would also have the appearance, if not the actual effect, of maintaining the status quo. We would strongly oppose such an arrangement.

That said, the current occupants could be included in management structure for Stiltsville, possibly representing the community or Biscayne Bay user groups. They have the technical expertise to help make decisions on maintaining the structures. They also appear to be willing to help maintain some of the structures themselves, or contribute their own financial resources towards maintaining and operating the structures, in exchange for use privileges. This form of "sweat equity" in the homes might be considered as an option for helping underwrite maintenance costs, especially if it is found by the non-profit board to be one of the only ways to make the structures self-sustaining.

#### Contingency Plan for the National Park Service

The concept of allowing a nonprofit to manage public access through an arrangement with the Park Service is relatively new, and is certainly untested in Biscayne National Park. There are no guarantees that the association will be able to raise the money necessary to maintain the structures, nor manage it well. NPCA considers it important to state that in the event that the non-profit association fails to implement an adequate public use plan, raise money to maintain Stiltsville or deliver its requirements, the National Park Service can terminate its arrangement with the non-profit organization. The Park Service might be unable to find an acceptable nonprofit organization in the first place. In any of these events, the Park Service must have a contingency plan to fall back upon. Although we support Alternative D as stated in our



Sun Coast Regional Office  
1909 Harrison Street • Suite 207 • Hollywood, FL 33020  
Telephone (954) 926-6327 • Fax (954) 921-7810

A similar group of rustic wooden homes known as "dune shacks" exists in Cape Cod National Seashore. Like Stiltsville, the seventeen shacks were originally privately owned, with clauses that require them to revert to park ownership under the terms of leases or agreements. Seven dune shacks are already in Park Service hands, the other ten will revert to NPS ownership at various points. In another parallel process to Stiltsville, a stakeholder group was established to recommend the uses and ultimate management regime for the shacks. The recommendation will be released to the public in March.

One of the issues that the Dune Shack group dealt with was creating an overall "vision" for the group of shacks, which are now used for a hodge-podge of purposes. The group considered thematic uses for the shacks, and concluded that one of the uniting values for these houses was "solitude," consistent with values sought by visitors to the seashore and the dune shacks. We feel that the Stiltsville non-profit group should also consider some thematic values for the Stiltsville structures. We hope that Biscayne National Park can provide a historian or cultural resource manager to help them develop a theme.

We believe that if the park service and nonprofit organization engage in a process to achieve a vision for the group of houses, the emphasis on access will be de-emphasized in favor of a less resource-intensive, more ecologically sound approach. Many of the comments from the public about the houses reflected a desire that the houses remain because of their reminder of a by-gone era, their usefulness to navigation, and their attractiveness as a fishing area.

Improving the National Park Service Functions. While NPCA supports public access to Stiltsville, we have grave reservations about creating a visitors center there. This would be expensive, difficult to maintain, and would be likely to attract many more boaters and visitors than the carrying capacity of the area would allow. While the GMPA/DEIS envisions a design to serve small groups and the activity sustainable, we envision a large demand by visitors to take advantage of such a facility. We simply do not support uses that would significantly increase boat traffic and possible pollution in the flats surrounding Stiltsville. Given the \$4.9 billion backlog in Park Service operations and maintenance costs, the costs of such a visitor's center would be prohibitive. The costs of staffing the visitor's center and for modifications required for public safety and compliance with the Americans with Disabilities Act would require structural modifications would be substantial.

A much better use for a National Park Service facility at Stiltsville is the creation of an office designed to help enforce Biscayne's fisheries and other laws and regulations. One of the most serious concerns raised during the scoping phase of the Biscayne National Park Fisheries Management Plan is the need for improved enforcement of fisheries laws. NPCA has had several meetings with professional recreational fishermen that operate in Biscayne National Park, and this concern is often brought up. Fishermen frequently observe violations of park regulations, including groundings, overfishing, and dangerous boating practices. Enforcement officers are extremely difficult to reach, and rarely respond reports of violations.



Sun Coast Regional Office  
1909 Harrison Street • Suite 207 • Hollywood, FL 33020  
Telephone (954) 926-6327 • Fax (954) 921-7810

comments referenced in the first paragraph, NPCA would also support a combination of Alternatives B and C to serve as such a contingency plan.

This contingency plan should be put into place in the event of a failure of Alternative A. A "failure" should be determined by the Superintendent of Biscayne National Park and the National Park Service Eastern Regional Director, and defined in the final plan. We suggest that the definition of failure be along the lines of an inability to function as an organization, an inability to raise the money or means necessary to maintain the structures, or a failure to devise a management plan consistent with Park laws and policies and that meets with National Park Service approval. It should also include the failure to identify an acceptable nonprofit organization.

Although Alternative D is the environmentally preferred alternative and we have supported it exclusively in the past, we are flexible due to ensuing agreements and discussions. We have recognized the desire to preserve Stiltsville as a cultural resource (see below) and have expressed our support for keeping the structures intact during mediation discussions. Thus we feel that the Park Service should pursue park funded programs, concession contracts, and competitive leases in order to provide public uses for Stiltsville. We disagree with Alternative C's proposal to allow leases for private, exclusive uses, since it would simply re-introduce the current, unacceptable arrangement by creating private, non-public purpose interests in Stiltsville. But we feel that the Park Service should be given an opportunity to carry out the mission proposed for the non-profit association if such an organization fails.

Discussion of the cultural importance of Stiltsville. Although the GMPA/DEIS described the chronological history of Stiltsville's colorful history (pp. 11-12) and refers to the "high level of public interest associated with the future of Stiltsville" (p. 2), the report does not describe the cultural significance of these structures, nor does it accurately depict them as resources being protected for their unique identity as opposed to their potential value for visitor use. This has implications on their management. By treating the structures as simply buildings that provide unique access to views and the rich marine environment, options discussed are neutral in terms of cultural importance.

NPCA does not believe that Stiltsville structures are historic, since all of them were constructed after 1960. However, taken as a group they represent the remainder of some cultural artifacts that associated with an interesting era of the city of Miami's short history. Because of that, the public values their preservation, and fought for the Park Service to initiate its management plan amendment process to save Stiltsville. Thus Stiltsville has earned a place in the cultural fabric of the region, and as a park resource the houses should be managed in way that is sensitive to this role. We are pleased that the management plan contemplates the use of Stiltsville for a variety of purposes consistent with Park Service policies. But we want to emphasize that they are being preserved not because of their location or appropriateness for visitation, but because they are beloved symbols for a number of area residents.



Sun Coast Regional Office  
1909 Harrison Street • Suite 207 • Hollywood, FL 33020  
Telephone (954) 926-6327 • Fax (954) 921-7810

NPCA recognizes that the lack of enforcement is due to budget and staffing constraints, and that the enforcement officers at the park do an excellent job. However, there are simply too few of them out on the water at a given time. NPCA strongly urges the Park Service to hire more enforcement officers, and provide them with facilities that make it more convenient to work the entire Park. Establishing a base of enforcement operations at Stiltsville structure could provide such a facility, and make it much easier to respond to reports of violations.

The Park might also consider encouraging the fishermen who frequently work the Bay to interact and develop relationships with the enforcement officers. Building trust and bridges to the fishing community would have several benefits. Park Service personnel could benefit from the knowledge from fishermen who know much about the resources and other users of the park. It would also open up channels of communication to enable fishermen to report on violators with some confidence that their energies are not wasted.

Conclusion. The purpose of Biscayne National Park is to "preserve and protect for the education, recreation, and enjoyment of present and future generations a rare combination of terrestrial, marine, and amphibious life in a tropical setting of great natural beauty." Public Law 90-606 (1980). At first glance, maintaining the manmade Stiltsville structures are inconsistent with this state purpose. However, providing certain public and agency uses of Stiltsville can enhance the park's purposes.

For example, Stiltsville can be managed to help "enable visitors to experience tranquility, scenic vistas, compatible recreation, and the underwater environment," one of the park's proposed missions in its new General Management Plan. Another mission that Stiltsville can enhance is the Park Service's ability to "contribute to the knowledge about natural and cultural resources and their associated values." Citizens in Florida have clamored to save Stiltsville for its cultural associations, and it can be managed to be consistent with its symbolic values as well as the purposes of the park.

To manage Stiltsville, the preferred alternative contains an innovative approach that could ensure that the structures are maintained without adding to the taxpayer's burden. The exact structure and operation of the nonprofit organization have yet to be determined, and NPCA has outlined some of our major concerns. If these concerns and suggestions are addressed, we feel that this plan will work. We are also pleased that if the arrangement does not appear to be serving the public interest, the National Park Service can discontinue its arrangement with the non-profit organization, and take over management responsibilities.

Sincerely,

*Mary Munson*

Mary Munson  
Regional Director



Sun Coast Regional Office  
1909 Harrison Street • Suite 207 • Hollywood, FL 33020  
Telephone (954) 926-6327 • Fax (954) 921-7810

ARAGON, BURLINGTON, WEIL & CROCKETT, P.A.  
OFFICE IN THE GROVE  
PENTHOUSE  
2699 SOUTH BAYSHORE DRIVE  
MIAMI, FLORIDA 33133

TELEPHONE: (305) 858-2900  
TELEFAX: (305) 858-5261  
E-MAIL: info@abwc.com

HUGH P. ARAGON  
DANIEL F. BLONSKY  
AVA BORRASSO  
ROBERT K. BURLINGTON  
JEFFREY B. CROCKETT

KEVIN C. KAPLAN  
LEE STAPLETON MILFORD  
SEAN R. SANTINI  
PAUL J. SCHWEP  
RONALD P. WEIL

February 13, 2003

Via facsimile  
And U.S. Mail

Superintendent Linda Canzanelli  
Biscayne National Park  
9700 S.W. 328<sup>th</sup> Street  
Homestead, Florida 33033

Dear Superintendent Canzanelli:

These comments are submitted on behalf of the National Parks Conservation Association, Tropical Audubon Society, Friends of the Everglades, Izaak Walton League, and Urban Environment League (the "Environmental Organizations"). Please include these comments as part of the record created in connection with the General Management Plan Amendment, Draft Environmental Impact Statement ("DEIS"), Biscayne National Park.

These comments express the Environmental Organizations' contingent support for Alternative A, that is, the execution of an agreement with a public, 501(c)(3) not-for-profit organization or trust (hereinafter, "Proposed Trust") charged with operating Stiltsville for the public benefit. Set forth below are certain conditions upon which we will support Alternative A. If these conditions are not met, then we believe Alternative D would best serve the purposes for which Biscayne National Park was established.

1. Exclusive Use and Occupancy Must Be Terminated Immediately

No serious dialogue on the future of Stiltsville is possible while the status quo remains in effect. For one, the current occupants have no incentive to participate in establishing a future management alternative. In fact, delay works to their benefit. For another, the Park Service's credibility and will on the issue is legitimately drawn into question when it fails to enforce its own pronouncements and regulations against exclusive use of Park resources. The Park Service would serve the public best by resolving to terminate exclusive use of Stiltsville as soon as possible. We understand that special use permits have been granted (without bidding of any sort) to certain individuals or entities. The legal basis for granting exclusive use permits has never been adequately explained. The permits expire on February 28, 2002. We urge the Park Service

Superintendent Linda Canzanelli  
Biscayne National Park  
February 13, 2003  
Page 2

to either competitively bid such permits to the public at large on February 28, 2002, or terminate exclusive use of the structures thus bringing to end the situation where a privileged few have special access to a public park resource. It is obvious that the current permit holders, to the extent they hope to be participants in the future of Stiltsville, will be far more motivated to work productively on the Proposed Trust once their preferential use is ended.

2. Stiltsville Must Be Managed For The Public Benefit

Any potential partner for the NPS in connection with Stiltsville must operate under a mandate of providing reasonable public use of and access to the Stiltsville structures. In this connection, the National Park Service Organic Act states that the fundamental purpose of the National Parks is to "conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for enjoyment of future generations." 16 U.S.C. § 1. The Organic Act requires that the resources of National Parks be accessible to the public and provides: "that the promotion and regulation of the various areas of the National Park System . . . shall be consistent with and founded in the purpose established by [16 U.S.C. § 1], to the common benefit of all the people of the United States." 16 U.S.C. § 1a-1. Thus, unless "directly and specifically" exempted by Congress, any activity within a National Park must conform with the fundamental purpose of the Park Service and must be authorized "in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established." 16 U.S.C. § 1a-1.

NPS regulations implementing the Organic Act specify that public access to National Park resources cannot be restricted in any way unless the agency follows specific procedures. Public use limits in parks are impermissible unless "necessary for the maintenance of public health and safety, protection of environmental or scenic values, protection of natural or cultural resources, aid to scientific research, implementation of management responsibilities, equitable allocation and use of facilities, or the avoidance of conflict among visitor use activities." 36 C.F.R. § 1.5(a)(1).

The Biscayne National Park Enabling Act requires that Biscayne National Park be administered in a manner consistent with the Organic Act's terms. 16 U.S.C. § 410gg-2(a). The Enabling Act also reinforces the requirement in the Organic Act that the park be managed pursuant to a management plan. 16 U.S.C. § 1a-7(b). All "lands, waters, and interests" within the boundaries of the park must be "managed for the purposes of the park." 16 U.S.C. § 410gg-1(a). Thus, general public access can be constrained by environmental considerations, such as the ecological carrying capacity of the area, concerns about the effects of boat traffic, and pollution problems associated with increased visitor activity. The Stiltsville structures may serve to enhance other park purposes, such as enhancing fisheries regulation enforcement or facilitating research on threatened resources. In any event, exclusive private occupancy similar to the existing arrangement serves no legally defensible public purpose.

ARAGON, BURLINGTON, WEIL & CROCKETT, P.A.

Superintendent Linda Canzanelli  
Biscayne National Park  
February 13, 2003  
Page 3

Exclusive occupancy of the Stiltsville structures is not in accordance with Congress' purposes in the Enabling Act, a fact that NPS has acknowledged. Former Biscayne Superintendent Dick Frost stated that, "it is [the NPS'] position that the campsite [lease] is not compatible with the purpose, nor the intent, for which Congress established Biscayne National Park," and that "the previously permitted activities in the area are not currently acceptable with our efforts to protect and enhance the unique ecosystem encompassed in northern Biscayne Bay." Superintendent Frost additionally noted that the NPS is under a "legal mandate" to "further the protection of the Biscayne Bay ecosystem" and to "work with [the exclusive leaseholders] to accomplish the transition of the [Stiltsville] area back to its natural state."

NPS is required by the Organic Act and the Biscayne National Park Enabling Act to implement a general management plan for Biscayne National Park consistent with the fundamental purpose of the National Park system. 16 U.S.C. § 1a-7(b); 16 U.S.C. § 410gg-4. Future uses for Stiltsville must achieve plan objectives. One major objective is providing the opportunity for visitors to explore undeveloped subtropical keys and the waterways winding through them. Other objectives address the need to educate visitors about the natural resources, and the need for the park to protect and to contribute to knowledge about resources. These are consistent with using the structures for education, research, resource protection activities, and environmentally friendly visitor recreation. None of the objectives are advanced by providing further exclusive use.

Consequently, the Environmental Organizations will support the execution of an arrangement with the Proposed Trust only if the Proposed Trust, like the NPS itself, includes within its organic documents a mandate to operate and manage Stiltsville for the benefit of the public, including ensuring an equitable allocation and use of facilities, and the avoidance of conflict among visitor use activities. These obligations of NPS cannot be delegated to the Proposed Trust without requiring that the Trust itself internalize and operate pursuant to the same mandate.

### 3. An Enforceable Commitment to Abide by a Public Access Mandate

Not only must the mandate of public use and access be required within the organic documents that pertain to whatever Proposed Trust the NPS selects, that mandate must be incorporated into whatever agreement NPS enters into with the Proposed Trust. Presumably, to effectuate Alternative A, NPS will need to enter into a memorandum of understanding ("MOU"), operating agreement, or the like, that governs the relationship between NPS and the Proposed Trust and imposes on the Proposed Trust some operating guidelines for the Stiltsville structures. The Environmental Organizations believe any proposed MOU must require the Proposed Trust to operate and manage the structures for the public benefit, providing reasonable public access and use on a non-discriminatory basis. While undoubtedly some of the details of the agreement must be hammered out in the MOU negotiation process, at least the following parameters are necessary:

ARAGON, BURLINGTON, WEIL & CROCKETT, P.A.

Superintendent Linda Canzanelli  
Biscayne National Park  
February 13, 2003  
Page 4

a. The Proposed Trust and its members must not obtain preferential treatment in determining access and use of the structures. Instead, the Trust should develop a proposed public use plan that extends to all the public equal footing in terms of access and use of the Stiltsville structures. In other words, entry to Stiltsville should not turn on membership in the Trust.

b. The park-visiting public should have ready access to the Proposed Trust via telephone and e-mail to obtain information regarding public access to Stiltsville.

In addition, the MOU should provide for best management practices to be utilized at Stiltsville so that the Structures remain as environmentally benign as possible. The structures could be models of "green energy" capabilities. Adequate, but visibly unintrusive, channel markings should be provided. Waste must be properly disposed of at Stiltsville as well as in Biscayne Channel.

### 4. Ensuring Public Participation and Involvement

The Proposed Trust board must include a broad cross-section of the community and not be controlled by any one set of stakeholders, as the current permit holders have dominated decision-making in Stiltsville to date. The board should represent the community in terms of its ethnic and racial makeup. Representatives of local governmental organizations like the Miami-Dade County Parks and Recreation Department, Cape Florida State Park, and Biscayne National Park should be invited to participate ex officio on the board. To be clear, the Environmental Organizations will not support NPS's turning the structures over to a board controlled by the current permit holders. Indeed, any such proposed trust would plainly fail as a legitimate 501(c)(3) entity.

Further, the public should be included in the planning process for the Trust. Public involvement should and will, once the public realizes its voice makes a difference to the Proposed Trust, move from the infrequent and sparsely attended public meetings to dynamic community forums where citizens, planner-, business leaders and other stakeholders work together to develop use plans that serve the public.

### 5. One Partner

While Alternative A refers to "one or more organizations," the Environmental Organizations will support an arrangement with one partner, not more than one. There are several reasons why the Proposed Trust alternative becomes unacceptable if more than one organization is involved. First, with more organizations it becomes that much more difficult for the NPS to comply with its nondelegable duty to ensure each organization functions so as to comply with the mandate of managing the structures for a public benefit. Partnership with a single Trust will give the Park a single partner -- and thus a single responsible party -- to look to in the management and operation of the structures.

ARAGON, BURLINGTON, WEIL & CROCKETT, P.A.



Superintendent Linda Canzanelli  
Biscayne National Park  
February 13, 2003  
Page 5

Second, entering a common management structure for all seven cabins presents the most efficient model for the management of the structures. Natural economies of scale can be achieved. Further, instead of seven separate groups, there is a common entity that can draw from various areas of expertise to operate all seven structures.

Third, a common public/private management such as the Stiltsville Trust will allow for operations at some cabins to subsidize the activities at others. For instance, fewer than all the cabins could be available for public rental as rustic cabins, but the rental revenue from some of the cabins could help to underwrite the costs in setting aside other cabins for uses like an artist in residence program or a research station.

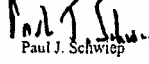
Fourth, conveying the operation of the structures under an MOU to a single entity will eliminate the public perception that the Park is returning the cabins to exclusive and preferential use by a select few. The cabins should be operated for the public by the public. Entanglements with several organizations populated by former lessees should be terminated.

6. Retaining Park Presence

Alternative A provides for the inclusion of Park Service functions such as a visitors' center and park satellite office at Stiltsville. Although the language used in the DEIS is unclear, we condition our support of Alternative A upon the Park's retaining (or "leasing back" from the Proposed Trust) at least two of the Structures to use as a visitors' center and park office. The Stiltsville structures provide an opportunity for the creation of a unique destination identity for BNP and retaining at least one structure as NPS's (and the public's) home at Stiltsville is important in this regard. A northern staff presence has long been needed for BNP. One structure could function as a ranger station/residence providing support for resource protection, homeland defense, public safety, drug and alien interdiction, etc. A second could function as a visitors' center and environmental, cultural, historical or education facility.

We are convinced that BNP is moving in the right direction in the DEIS and therefore give our conditional support to Alternative A with the above provisos, failing which we support Alternative D for the reasons stated in the Park Service's 1983 General Management Plan and in subsequent statements over the years.

Very truly yours,

  
Paul J. Schwiép

On behalf of:

cc: Nancy Liebman, President, Urban Environment League  
Mary Munson, National Parks Conservation Association  
David Reiner, Esq., President, Friends of the Everglades  
Robert Skinner, Izaak Walton League  
Richard Townsend, Tropical Audubon Society

ARAGON, BURLINGTON, WEIL & CROCKETT, P.A.



To: <BISC\_Stiltsville@nps.gov>  
cc:  
Subject: Survey Comments

>  
02/11/03 02:59 PM  
EST  
Please respond to

I like your proposal D which will restore, over time, the natural habitat. As an added version, I could see having one structure remain and perhaps expanded, to be used by the Park Service for a variety of purposes, such as:  
1) establish a presence in the northern part of the park for service needs and enforcement of regulations  
2) provide access to school groups, registered ecology minded non-profit organizations, to the public (in limited numbers) to spread awareness of the fragility of the Biscayne environment and why we should protect this environment for future generations.

Proposal A leaves too much room for abuse and would mostlikely benefit those with the most financial resources and creative lawyers.

Sincerely

Coconut Grove, FL 33133  
Please withhold my name from any publication

JOAN R. MOWERY, CPA  
205 N. Ocean Drive, RT. 7 Gulfstream Shores  
Dagny Johnson Key Largo Hammock Botanical State Park  
N. Key Largo, FL 33037  
PHONE 305/451-4195 FAX 305/451-6449  
Email joankeys@bellsouth.net

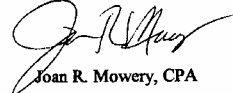
February 12, 2003

National Park Service  
U. S. Dept of the Interior  
Biscayne National Park  
9700 SW 328th Street  
Homestead, FL 33033

Re: Stiltsville Plan

After studying the alternatives for management of Stiltsville, I support the preferred alternative A. I look forward to the public being able to share this unique area. An independent NFP will also take some of the management burden from your usually overworked staff.

Hope & Peace & Love,

  
Joan R. Mowery, CPA

FAX TO 305.230.1190

BISC: 02-13-03:ca.

FROM : 567-2706

PHONE NO. :

Feb. 11 2003 02:38PM P1



The Florida Division of the  
Izaak Walton League of America  
Post Office Box 236  
Homestead, Florida 33090  
Telephone: (305) 451-0993



February 10, 2003

National Park Service, Biscayne National Park  
Linda Canzanelli, Superintendent  
9700 SW 328 Street  
Homestead, Florida 33033-5634

RE: Draft Biscayne National Park General Management Plan Amendment Environmental Impact Statement

Dear Superintendent Canzanelli:

On behalf of the Izaak Walton League of America, Inc., the Florida Division of the Izaak Walton League of America, Inc., and the Florida Keys Chapter of the Izaak Walton League of America, Inc., (hereafter collectively referred to as "IWLA") I am pleased to offer the following comments on the Service's Draft Biscayne National Park General Management Plan Amendment. IWLA is proud to have had a role in the establishment of Biscayne National Monument, the predecessor of Biscayne National Park, and thanks the Park Service for the present opportunity to comment.

Since the establishment of the National Park, IWLA has watched closely the long and arduous process involving the stilts structures in Biscayne Bay that are commonly referred to as "Stiltsville". We communicated to our elected representatives about the importance of retaining these unusual features within the Park's continued ownership and control. The presence, location and nature of the Stiltsville structures presents a unique opportunity to enhance the visitation opportunities for the public to experience the Park. The Miami area is fortunate to have two important national parks on its doorstep. While the closest, Biscayne National Park has also been the least accessible. The opening of the Stiltsville structures is one way to improve that accessibility. We hope other features at the north end of the Park will be added to help the public better appreciate this jewel.

After reviewing the proposals made by numerous parties regarding the Stiltsville structures, and examining the Draft Biscayne National Park General Management Plan Amendment Environmental Impact Statement, we support the implementation of Alternative "A", for the management and use of the Stiltsville structures. We understand that there will be a non-profit organization established to perform the management and maintenance of the structures. We think this is a desirable method to accomplish the work required for the structures for many reasons, including the limited federal resources appropriated and available for the maintenance and management of the remainder of the Park.

FROM : 567-2706

PHONE NO. :

Feb. 11 2003 02:39PM P2

In supporting the approach of having the non-profit organization as a manager of the Stiltsville structures however, we do not wish to give the impression that we think the Park's managers should not exercise careful oversight of the organization responsible for the management. Such oversight is important not only to correct management mistakes or to insure that management policies maintain the proper direction, but also, and more importantly, to enable the Park's management to bring its prestige and other resources to bear to assist the non-profit organization in carrying out the management and operation of the structures. Clearly, there will need to be close continuing coordination between the Park's managers and the organization to ensure that operation of the structures is consistent with the Park's policies.

Thank you again for the opportunity to comment.

Sincerely,



Michael F. Chenoweth,  
National Director

January 30, 2003

Superintendent Linda Canzanelli  
Biscayne National Park  
9700 S. W. 328<sup>th</sup> Street  
Homestead, FL 33033

Ref.: Stiltsville

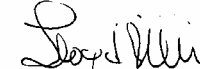
Dear Linda:

I reluctantly agree to Alternative A for the management of Stiltsville. I wish enough funds were available for complete and unobstructed management by the Park but I recognize that will not happen.

We'll probably be lucky if the present administration in Washington doesn't privatize the entire National Park System.

Given the political climate, Stiltsville owners will still have an input and I can only hope it will be more cooperative than their decision to not abide by agreement to vacate.

Best Wishes,



Lloyd Miller  
27720 S. W. 197 Avenue  
Homestead, FL 33031-3216

BISC: 2-5-03:ea

**I WOULD LIKE  
RECORD "COMMENT ON DRAFT DOCUMENT" 2003**

To All Concerned Floridians and Historians

Stiltsville Today.... Stiltsville Tomorrow???

To Date: Stiltsville has been saved from the wrecking ball. By Who? By the S.O.S. Organization run by the Stiltsville homeowners and friends, and the tens of thousands of South Floridians who raised their pens and voices. The Local and State Historic Preservation Boards who have designated Stiltsville Historic. **BUT NOT!** the National Park Service who oversees Federal Historic Designation.

Biscayne Bay has a "sensitive eco-system." The Stiltsville home owners have taken great care over the past 45 plus years not to damage this system. Under the current uses of Stiltsville there is minimal impact.

This is the Park's most preferred plan.

# 1. Take one of the structures and turn it into a full-time "Ranger Station" with two full-time rangers and 3 part-time assistants.

Usage 365 days/yr.... 4 Boat trips/day

# 2. Take a structure close to the ranger station and use it as their visitor/interpretation center.

One staff member and 20 visitors.  
Usage 360 days/yr.... 10 boat trips/day

# 3. Third structure would be an educational facility that could handle groups of 30 twice per day.

Usage 360 days/yr.... 2 boat trips/day

# 4. Fourth structure would be used as a meeting facility to handle groups of 15 participants

Usage 300 days/yr.... 3 boat trips/day

# 5. Fifth structure would be a research facility and would accommodate 5 scientist.

Usage 360 days/yr.... 4 boat trips/day

# 6. Sixth structure would be used as a artist -in-residence retreat 2 artist

Usage 210 days/yr.... 1 boat trip/day

# 7. I believe that one house will be "torn down." The "A-Frame house" it needs the most repairs, plus the Park only refers to 6 uses.

Total boat trips per year 8,270

Total annual use "people" 36,975

That is a lot of impact on a "sensitive eco-system."

**I PERSONALLY DO NOT THINK THIS  
PLAN IS IN S. FLORIDA'S BEST  
INTERESTS**

Structure # 6 closely resembles normal use of 5 of the 7 homes today under present conditions.

Also, on page 24 second to the last paragraph states: "They will "re-design," also "structural alteration will be needed."

This information can be found in Biscayne National Park's General Management Plan, Amendment, Draft and Environmental Impact Statement Pages 23, 24, 25 and 26.

Concerned Citizens of South Florida

**WILLIAM ENGELHARD  
200 NW 134 ST.  
N. MIAMI, FL. 33169  
305-685-2652**

BISC: 2-13-03: ea

①

## Committee on Resources

### Subcommittee on National Parks & Public Lands

#### Witness Statement

#### Testimony

#### Committee on Resources

#### Subcommittee on National Parks and Public Lands

#### United States House of Representatives

#### Concerning H.R. 3033

by

**Dr. Ronald D. Jones, Ph.D.**

**Director and Professor**

**Southeast Environmental Research Center and**

**Department of Biological Sciences**

**Florida International University**

**Miami, Florida 33199**

**May 23, 2000**

**Washington, D.C.**

My name is Ronald Jones and I am the Director of the Southeast Environmental Research Center and a full Professor of Biology at Florida International University. In addition, I am currently on an IPA from the State of Florida as a Senior Scientist to the United States Army Corps of Engineers, Jacksonville District. I have a Ph.D. in microbiology from Oregon State University and have spent 15 years working in Biscayne Bay, the adjacent marine waters, and the Florida Everglades.

My education, experience, and research qualify me as a water quality expert and ecologist. I have been trained in oceanography and specialize in the analysis of nutrients in seawater. I serve on the Technical Advisory Committee for the Water Quality Protection Program for the Florida Keys National Marine Sanctuary and we conduct all of the water quality analysis for the Sanctuary. In addition to monitoring water quality in the Florida Keys National Marine Sanctuary, we designed and continue to monitor water quality networks from Charlotte Harbor on the west coast of Florida to Dry Tortugas National Park to northern Biscayne Bay. In all this network consists of over 350 stations and encompasses greater than 3,200 square nautical miles (figure 2). At each of these stations, we measure 17 chemical, biological, and physical water quality parameters. This massive effort provides us the unique opportunity to explore the spatial effects of water quality and the effects of human activity on the marine and estuarine resources of south Florida.

Of more relevance to this hearing is our water quality monitoring effort in Biscayne Bay. Our comprehensive water quality monitoring of Biscayne Bay started in September 1993 and after conducting a spatial analysis of the data in May 1996 was modified to include 10 stations in north Biscayne Bay. During all of this period and continuing to date, we have collected data along the northern boundary of Biscayne National Park, including Stiltsville, and Biscayne Channel, and in the broader area known as the Safety Valve.

Of all of the water quality parameters we measure Chlorophyll-a and turbidity are the most sensitive

<http://resourcescommittee.house.gov/106cong/parks/00may23/jones.htm>

1/13/03

②

indicators of water quality degradation.

Chlorophyll-a is the plant pigment that makes plants appear green and is responsible for photosynthesis. Chlorophyll-a is an excellent indicator of how much algae there is in the water, and these algae respond in the same way your lawn does when fertilizer is applied. As you know when you put down lawn fertilizer, the grass gets greener and grows faster. Chlorophyll-a is just the chemical way of measuring how green the water is due to the presence of plants. Therefore, if there were a nutrient problem in the vicinity of Stiltsville it would be evidenced by an increase in the concentration of Chlorophyll-a in the water. Instead of an increase in Chlorophyll-a, we instead observe consistently the lowest or second lowest concentration of Chlorophyll-a in Biscayne Bay, around 400 parts per trillion or less. At this point, I would like to direct your attention to figure 1, which shows the Chlorophyll-a concentrations in Biscayne Bay over the last seven years. As you can see, there is no increase in the concentration of Chlorophyll-a surrounding the area where Stiltsville is located. For reference, look at figure 2 which shows the remainder of the water quality monitoring network. It is easily seen where the nutrients are in the system. I would also like to point out that to even see the concentration of Chlorophyll-a near Stiltsville on these figures we had to stop the scale at 3,000 parts per trillion. In actuality, the Chlorophyll-a concentration in parts of the system are over 40,000 parts per trillion. Therefore, it is easily concluded that Stiltsville has no effect on water quality as indicated by the most sensitive analysis we perform.

Turbidity is the measure of how much fine suspended material there is in the water. In simple terms, how cloudy the water is. It is not only an indicator of the algae and other microscopic organisms but also an indicator of the bottom of the bay being stirred up by wind, boats, and other activities. Although I did not bring any figures showing turbidity in the area, what they show is that the Stiltsville area does not have any significantly higher turbidity than other shallow areas in the Bay and Park. In fact, once again turbidity values indicate that the area is well flushed by the tides and that the real human induced turbidity increases are associated with the navigational channels. Once again, it is concluded that Stiltsville has no negative impacts on the Bay's water quality as indicated by turbidity.

I could go through the remaining 15 parameters we measure, but I hope it is sufficient to say that none of these parameters indicate any water quality degradation associated with the presence of Stiltsville. If you are interested or require further information I could provide the Committee with our annual reports and publications or you could visit our internet site at <http://serc.fiu.edu> and look at all of the water quality maps for the area.

In addition to the monitoring data, I once again visited Stiltsville last week to ensure that there were no visible biological changes or visibly evident water quality problems associated with the area that may have gone unnoticed by our network. This visit proved to me once again that not only are there no water quality problems associated with the 8 remaining structures, it is inconceivable that there could be any considering the insignificant area and zero discharge systems associated with Stiltsville. This area of the Bay is so well flushed and the houses so well dispersed with so little area in consideration that there is virtually no way they could have a significant impact. In fact, it is highly likely that the physical structures actually enhance the ecology of the Bay by providing habitat and shelter for marine organisms.

In conclusion, it is my expert opinion that the presence of Stiltsville in no way negatively affects the water quality or ecology of Biscayne National Park or Biscayne Bay in general. Removal of the structures would do more harm than good and therefore Stiltsville should be allowed to remain as is.

<http://resourcescommittee.house.gov/106con/parks/00may23/jones.htm>

1/13/03 (3)

subsequent leases of 1967 and 1972 were identical for the most part, save for the steady increase in the price of the lease per annum which totaled \$300 per annum in 1972, and the additional clause that the Lessee would hold and save harmless the Board of Trustees and the State of Florida from all claims arising out of the lease. The 1972 lease also included a clause whereby the Lessee agreed that no raw sewage would be discharged from the sites, (See Appendix C). This was merely a protective measure, for this form of waste management was not commonly practiced by the leaseholders.

In 1974, the State of Florida and the Board of Trustees interest in Biscayne Bay and the land surrounding Stiltsville intensified. Biscayne Bay in Dade and Monroe Counties, was designated and established as an aquatic preserve under the provisions of section 258.39, and more specifically, section 258.397 of the Florida Statutes. The intention of the legislature was, "to preserve Biscayne Bay in an essentially natural condition so that its biological and aesthetic values may endure for the enjoyment of future generations." The newly established preserve included the Biscayne Flats on which the Stiltsville houses rested, and the provisions of the Act provided that: "no further sale, transfer, or lease of sovereignty submerged lands in the preserve shall be approved or consummated by the Board of Trustees, except upon a showing of extreme hardship on the part of the applicant and a determination by the Board of Trustees that such sale, transfer, or lease is in the public interest." Subsequently, the leaseholders of the Stiltsville campsites knew that their chances for renewing their leases in 1976 would be affected and would be subject to the new conditions of the aquatic preserve.

In April of 1976, consideration was given to the Stiltsville leaseholders for renewal of the fifteen campsite leases in Biscayne Bay, Dade County, "for a period to end July 1, 1999, at an annual rental of \$700, with the rental revenues subject to review by the lessor in 1980 and every five years thereafter during the duration of the leases." The provisions of section 258.397 were heavily debated, especially as to what constituted a showing of extreme hardship on the part of the applicant and a determination by the Board of Trustees that such leases is in the public interest. A number of ecologists felt that the leases should not be granted and that the Stiltsville houses should be torn down because they represented an ecological detriment. Apparently, this concern stemmed from an unfavorable finding of ecological detriment due to still houses in the Florida Keys, still houses in Port Richey located in Pasco County, and still houses in Charlotte County's Bull Bay. Mr. Boyce Ezell, representing

thirteen of the leaseholders, presented background data on the Stiltsville leases. Included in the data was convincing testimony of a marine biologist from the University of Miami School of Marine Science that the existence of the houses at Stiltsville had not only not destroyed the marine life there but had been one of the catalysts for bringing it back to the Biscayne Flats. The Flats were found to be, in fact, ecological havens and that it would upset the ecological balance to tear the houses down, a consequence clearly not in the public's interest. After further debate, a compromise was reached and the terms of the 1976 leases were drawn out. (See Appendix D).

The 1976 campsite leases included all of the old provisions found in the preceding Stiltsville leases as well as a number of notable additions to the terms and conditions. First, "the Lessee shall not be allowed to expand the size of the structure." Second, "the value of the structure will be amortized over the life of the lease on a straight line schedule of depreciation." Third, "if any structure is damaged to an extent of less than 50% of the fair market value at the time of its damage, the structure may be reconstructed provided reconstruction is completed within six months of the date of damage; if a structure is damaged to an extent of 50% or more of its fair market value at the time of its damage, the Lessee may not reconstruct and will vacate the premises according to the terms of the lease." Fourth, "the leased premises are subject to inspection by the Lessor or his designated agent at any reasonable time." Fifth, "the Lessee agrees to maintain the structure in a reasonably sound, livable and attractive condition." Finally, "the Lessee agrees that, automatically upon the termination of this lease or cancellation of this lease, occupancy and possession of said land shall cease and terminate; The still houses and all improvements will be removed, by and at the owner's expense, unless

otherwise mutually agreed to, and if removed by the Lessor, a lien to cover the cost of removal will be placed on any other property owned by the Lessee in the State of Florida." In response to a request by Mr. Bruce Smathers (member of the Board of Trustees) for clarification of the staff's interpretation of the lease renewals, the Board of Trustees confirmed that, "these renewals would in no way anticipate, presuppose, or be meant to include an extension of said leases beyond July 1, 1999." The State of Florida then issued an edict to the extent that the houses should be torn down by 1999 pursuant to the campsite leases.

The Biscayne Flats and the Stiltsville property has since become a part of the Biscayne National Monument and ostensibly under the jurisdiction of the Federal government. If this is the case, the leaseholders of the

national parks or other types of units within the National Park System. Petrified Forest National Monument in Arizona, for example, was redesignated by an Act of Congress as Petrified Forest National Park. Chaco Culture National Monument in New Mexico is now Chaco Canyon National Historical Park. Santa Rosa Island National Monument in Florida is now part of Gulf Islands National Seashore.

Additionally, not all National Park System units that carry the name "national monument" were established by presidential proclamation. Congress has enacted legislation to establish national monuments 38 times. Like the national monuments designated by presidents, some of these monuments have been redesignated through acts of Congress as other types of units. For example, Harpers Ferry National Monument in West Virginia is now Harpers Ferry National Historical Park. Biscayne National Monument in Florida is now Biscayne National Park.

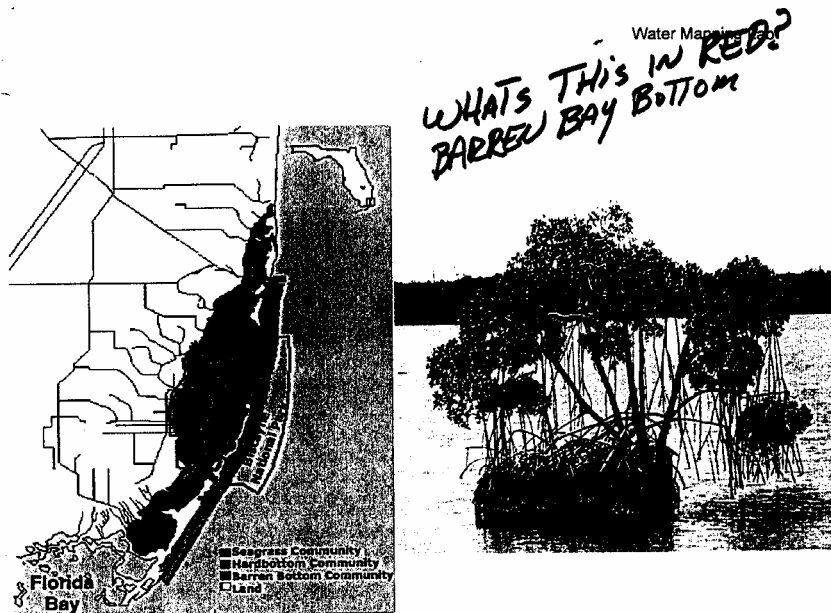
The National Park Service administers national monuments in the same manner as other units of the National Park System. They are subject to the provisions of the proclamations that established the individual monuments, along with any subsequent legislation addressing them, and to the laws and regulations that govern national park units generally. The primary law on which National Park Service management policies are based is the Act of August 25, 1916, known as the "Organic Act," as amended. This law, which continues to serve as the basic mission statement of the National Park Service, requires the agency "to conserve the scenery, and the natural and historic objects and wildlife therein and to provide for the enjoyment of the same...as will leave them unimpaired for future generations."

Consistent with that principle, management plans for national monuments established by Presidential proclamation that are under the National Park Service's jurisdiction are developed in the same manner as other units of the National Park System. General management plans for park units are guided by the National Parks and Recreation Act of 1978. This Act directs the National Park Service to prepare and revise in a timely manner general management plans for the preservation and use of each unit of the National Park System and to include (1) measures for preservation of the area's resources, (2) indications of the type and general intensity of development, including visitor circulation and transportation patterns along with locations, timing, and anticipated costs, (3) identification of visitor carrying capacities, and (4) indications of potential modifications to the external boundaries of the unit. The general management planning process includes substantial public involvement.

#### Fish and Wildlife Service

<http://www.doi.gov/oc/2001/hr2114.htm>

5/1/02



### Biscayne Bay Ecosystem

The ecosystem of Biscayne Bay includes the marginal freshwater and saltwater wetlands, intertidal communities, and marine communities. The health of each of these communities can be linked to their interaction with the hydrologic regime of South Florida. Major factors that may affect these communities are:

- x The alteration and control of freshwater flow entering Biscayne Bay.
- x Urbanization of Dade County, thereby increasing storm runoff and pollutants into Biscayne Bay.
- x Natural and artificial changes to vegetation associated with fires and urbanization.
- x Natural disasters, including hurricanes, and prolonged wet or dry seasons.

The health of the Biscayne Bay ecosystem requires that a critical balance be maintained among the ecosystem communities. Significant changes in one will affect the others. Changes in the wetland communities (including vegetation) can alter surface water flow regimes and bird and fish behavior. Our ability to interpret historical changes, as well as to monitor future conditions, in the bay and surrounding area will allow us to improve or maintain the sensitive balance in freshwater quantity and quality necessary for the ecosystem components to continue a balanced existence.

IT SEEMS TO ME THAT B.U.P. IS TRYING FOR WILDERNESS DESIGNATION? HOW BY ELIMINATING PLANES, BOATS, WAVE RUNNERS OH YES AND NOISE OF ANY MAN MADE KIND.

Soon you will discover that complete park experiences feature both sights and sounds.

**Soundscapes** are acoustic (pertaining to sound) environments. People experience soundscapes by hearing, rather than by seeing. Soundscapes may include both mechanical and natural sounds. They may vary in their character from day to night, and from season to season.

**Natural Soundscapes** are park resources that may include the sound created by wind, flowing water, crashing waves, mammals, birds, insects, and other biological and physical components.

**Natural Ambient Sound Levels** are the natural soundscape conditions that exist in a park in the absence of any human-produced noise. This is sometimes referred to as natural quiet.

National parks include a symphony of natural sounds that is a rich natural resource important to ecological communities.

In the wild, sound is a matter of life and death. Birds, insects, mammals, and amphibians rely on complex communication networks to live and reproduce. In habitats where wildlife vocalizations signify mating calls, danger from predators, or territorial claims, hearing these sounds is essential to animal survival.

Research in bio-acoustics (bio = life, acoustics = sound) is an important tool for defining the health of natural habitats. Scientists can discern details about animal populations and behavior by recording sounds in the wild. Such bio-acoustical recordings are used in a variety of ways, including bird censuses, bat echolocation studies, and marine mammal surveys.

\*\*\*\*\*

### The national parks were established:

*... to conserve the scenery, the natural and historic objects, and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations ....*

RECOMMENDATION

NONE OF THE LANDS OR WATERS WITHIN BISCAYNE NATIONAL PARK WERE FOUND TO BE SUITABLE FOR WILDERNESS DESIGNATION. ALTHOUGH THE PARK CONTAINS OUTSTANDING EXAMPLES OF ESTUARINE AND MARINE ECOSYSTEMS, THE PROXIMITY--SPATIALLY, VISUALLY, AND ACOUSTICALLY--TO MAJOR DEVELOPMENT AND WELL-ESTABLISHED MOTORIZED ACTIVITY (AIRPLANES, MOTORBOATS, LARGE SHIPS) IS NOT CONDUCTIVE TO AN EXPERIENCE OF SOLITUDE AS INTENDED IN THE WILDERNESS ACT OF 1964.

## Wilderness Eligibility

Area of Park	<u>Criteria</u>			<u>Eligibility</u>
	without man's imprint	solitude/unconfined, primitive recreation	sufficient size	
mainland shoreline	O	O	O	not eligible
Arsenicker Keys	X	I	I	possibly eligible
bay	O	O	I	not eligible
southern keys/waters (south of Caesar Creek)	X	I	X	possibly eligible
Adams Key	O	O	I	not eligible
Elliott Key (undeveloped)	I	I	I	possibly eligible
Sands Key	I	I	I	possibly eligible
northern keys (north of Sands Key)	O	O	O	not eligible
Hawk Channel	O	O	I	not eligible
reef tract	O	O	I	not eligible

X = satisfies criteria  
I = may satisfy criteria  
O = does not satisfy criteria



February 4, 2003

## Stiltsville Facts

In January of this year I mailed out over 300 letters to the Management Committee of the Biscayne Bay Partnership Initiative.

Several of the response letters that were sent back "to my amazement" called the Stiltsville home owners "FREE LOADERS."

The public should be made aware that we are not “free loaders.” I belong to the Miami Springs Power Boat Club who pays Miami-Dade County Ad Volorem taxes on our home. Last year our bill was over \$1400.00. Also we paid the Biscayne National Park up to \$1,000.00 a year for our lease. In the late 1990's Biscayne National Park refused to accept our checks and sent them back.

In closing I would like to say our stilt home has taken a lot of "blood," "sweat" and "tears" to maintain for the last 45 years.

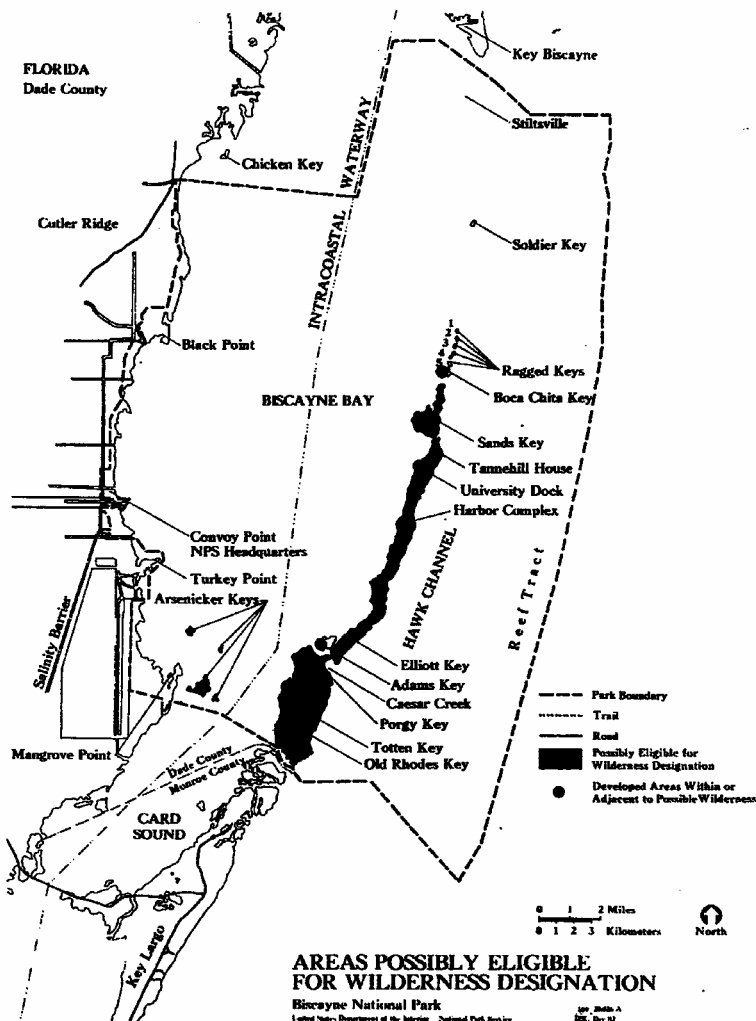
Enclosed: copy of 2002 tax bill

William H Engelhard

LETTER TO THE HONORABLE  
SIR

[illegible]

This is OUR TAX Bill on our SITTING HOME



**Carlos Mateo**  
12/13/02 04:02 PM  
EST

To: Linda Canzanelli/BISC/NPS@NPS  
cc: Susan Gonshor/BISC/NPS@NPS, (bcc: Eliada Acosta/BISC/NPS)  
Subject: Public notice for Stiltsville Public hearing is completely inadequate!!

FYI

----- Forwarded by Carlos Mateo/BISC/NPS on 12/13/02 03:52 PM -----



"Ed Swakon"  
<eswakon@eas-eng.com>  
12/13/02 03:36 PM  
EST  
Please respond to  
eswakon

To: <BISC\_Information@nps.gov>  
cc: "Nancy C. Morgan" <Nancycgms@aol.com>, "Carl B. Straw" <E-mail> <cstraw@gate.net>, "Philip B. Everingham" <E-mail> <pbeemsd@hotmail.com>, "Duff Matson" <E-mail> <duff@mcuretye.com>, "John Harrison" <E-mail> <jchconst@gate.net>, "CARL LEIDERMAN" <E-mail> <carl@captharry.com>, "Frank F. Herhold" <E-mail> <frank@miasf.org>

Subject: Public notice for Stiltsville Public hearing is completely inadequate!!

Dear Ms. Canzanelli:

I received on Thursday December 12, 2002 your letter announcing the Stiltville public hearings on December 16/17, 2002. Providing less than a week (only 2 working days) notice is completely inadequate and appears to be indicative of your desire NOT to allow for meaningful public comment. In previous correspondence I have raised similar concerns, but apparently to no avail.

This is to formally request that additional public hearings be schedule with adequate (NEPA guidelines should be adequate) notice given to allow for appropriate scheduling. I await your response.

Ed Swakon  
EAS Engineering, Inc.  
55 Almeria Ave.  
Coral Gables, FL 33134-6118  
305-445-5553  
305-444-2112 - fax  
Mailto:eswakon@eas-eng.com  
<http://www.eas-eng.com>

## REFERENCES

### BIBLIOGRAPHY

- Anderson, William. 2001. Greater Miami Convention and Visitor's Bureau, Statistics Department. Personal communication, 19 Sept 2001.
- Ault, Jerald, Smith, Steven, Meester, Geoffrey, and Luo, Jiangang. 2001. *Site Characterization for Biscayne National Park - Assessment of Fisheries Resources and Habitats*. University of Miami – Rosensteil School of Marine and Atmospheric Science.
- Ayscue, Jon K. 1996. *Hurricane Damage to Residential Structures: Risk and Mitigation*. Natural Hazards Research Working Paper #94. Natural Hazards Research and Applications Information Center, Institute of Behavioral Science, University of Colorado.
- Baldwin, Antoinette. 2001. Webmaster Stiltsville.Org. Personal communication, 25 Sept. 2001.
- Battle, Karen, 1997. *Erosional Changes in Vessel-Damaged Seagrass Beds in Biscayne National Park*. Resource Management Division, Biscayne National Park, October 27.
- Blair, S. 2001. Personal communication. Chief, Restoration and Enhancement Section, Natural Resources Division, Miami-Dade Department of Environmental Resources Management (DERM). Miami, Florida.
- Boating Research Center. 1991. *Boat use Patterns and Boat Traffic Study: Biscayne Bay, Dade, County, Florida*. Division of Resource Management Biscayne Bay National Park.
- Canzanelli, L. 2001. Personal communication. Superintendent, Biscayne National Park. Homestead, Florida.
- City of Miami, Department of Public Facilities, Marinas Homepage. 2000. Accessed 19 Sept 2001 at [http://www.ci.miami.fl.us/PublicFacilities/Marinas/mar\\_home.html](http://www.ci.miami.fl.us/PublicFacilities/Marinas/mar_home.html).
- Council on Environmental Quality, Executive Office of the President. 1978. "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act." *Code of Federal Regulations* Title 40, Parts 1500-1508. Washington, D.C.
- Dusek, Robert. No published date. *Seagrasses of Biscayne National Park, A Review of Their Biology and Ecology and Recommendations for Monitoring*. Biscayne National Park, Internal Research Document.
- Extension Toxicology Network (EXTOXNET). 1996. *Pesticide Information Profiles*. United States Department of Agriculture, National Agricultural Pesticide Impact Assessment Program.
- Florida Department of Natural Resources. 1991. *Biscayne Bay Card Sound Aquatic Preserve Management Plan*. Office of Coastal Management. Tallahassee, Florida.
- Haley, Kathy. 2001. Marina Director, Miami-Dade Parks and Recreation. Personal communication, 19 Sept 2001.

## REFERENCES

- Harper, Douglas, Bohnsack, James, and Lockwood, Brian. 1992. *Recreational Fisheries in Biscayne National Park, Florida 1976-1991*. Marine Fisheries Review.
- Izaak Walton League (IWL) Martin, Laurie, and Hoskins, Zach. *Caught in the Wake – The Environmental and Human Health Impacts of Personal Watercraft*. Izaak Walton League of America. <http://www.iwla.org/siteindx.htm>
- King, Joyce. 2001. St. Petersburg Audubon Society, Conservation Chairperson. Personal communication, 25 Sept. 2001.
- Littler, Diane Scullion *et al.* 1989. *Marine Plants of the Caribbean – A Field Guide from Florida to Brazil*. Smithsonian Institution Press.
- Lockwood, B., and B. Perry. 1997. Biscayne National Park: Annual Fisheries Report 1996. Biscayne National Park Division of Resource Management.
- Lockwood, B., and B. Perry. 1998. Biscayne National Park: Annual Fisheries Report 1997. Biscayne National Park Division of Resource Management.
- Meehan, David. 2001. quote on FWC website.  
[http://www.floridamarine.org/news/view\\_content.asp?annID=1952](http://www.floridamarine.org/news/view_content.asp?annID=1952)
- Metro-Dade County Planning Department. 1986. *Biscayne Bay Aquatic Preserve Management Plan (Draft)*. Miami, Florida.
- Miami-Dade County Public Schools. 2001. Statistical Highlights, 2000-01. Available on the Internet at <http://www.dade.k12.fl.us/district/>. Miami, Florida.
- Miami Port Authority. 2001. Overview and Statistics. Accessed 18 Sept 2001 at <http://www.metro-dade.com/portofmiami/>.
- Moyle, P. and J. Cech, Jr. 1988. *Fishes: An Introduction to Ichthyology*, Second Edition. Prentice Hall.
- Muller, Peter O. 2001. "Miami (Florida)." Microsoft Encarta Online Encyclopedia. Accessed 19 Sept 01 at <http://beta.encarta.msn.com/>.
- Mulliken, John D. and Joel A. VanArman, eds. 1995. *Biscayne Bay Surface Water Improvement and Management, Technical Supporting Document*. south Florida Water Management District, Planning Department, West Palm Beach, Florida.
- Murphy, Jeanne. 2001. University of Florida / Pinellas County Extension Service, Wildlife Specialist. Personal communication 25 Sept. 2001.
- Myers, Ronald L, and John J. Ewel. 1990. *Ecosystems of Florida*. University of Central Florida Press, Orlando, FL.
- National Park Service, U.S. Department of the Interior. 1978. Biscayne National Monument, Florida, Final Environmental Statement and General Management Plan. September.

- National Park Service, U.S. Department of the Interior. 1983. *Biscayne National Park General Management Plan, Development Concept Plan, Wilderness Study, and Environmental Assessment*. Homestead, Florida.
- National Park Service, U.S. Department of the Interior. 1999. *Water Quality Concerns Related to Personal Watercraft Usage*, by M. VanMouwerik and M. Hagemann. Water Resources Division.
- National Park Service, U.S. Department of the Interior. 2000a. Director's Order # 47: Soundscape Preservation and Noise Management. Available on the Internet at <http://www.nps.gov/refdesk/mp/index.html>.
- National Park Service, U.S. Department of the Interior. 2000b. *Management Policies*. National Park Service D1416. [Washington, D.C.].
- National Park Service, U.S. Department of the Interior. 2001a. *Director's Order #12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision Making*. [Washington, D.C.].
- National Park Service, U.S. Department of the Interior. 2001b. Biscayne National Park website. <http://www.nps.gov/bisc/>.
- National Park Service, U.S. Department of the Interior. 2002. Biscayne Bay. National Park Service website [www.nps.gov/bisc/resource/bay.htm](http://www.nps.gov/bisc/resource/bay.htm) accessed in August 2002.
- Nelson, J. 1994. *Fishes of the World, Third Edition*. New York, NY: John Wiley & Sons, Inc.
- Patterson, M. 2000. *The Stiltsville Area and Surrounding Environment*.
- Paul, Ann. 2001. Florida Audubon Society. Personal communication, 25 Sept. 2001.
- Phang, Michael K. P. E., Ph.D. 2000. *Stiltsville Structures – Field Observation and Inspection*. Technical memorandum.
- Robins, C. Richard, Ray, G. Carleton, and Douglass, John. 1986. *Peterson Field Guides – Atlantic Coast Fishes*. Houghton Mifflin Company.
- Sargent, F.J., T.J. Leary, D.W. Crewz, and C.R. Kruer, 1995. *Scarring of Florida's Seagrasses, Assessment and Management Options*. Florida Marine Research Institute, Technical Report.
- Save Our Seabirds. 2001. <http://www.seabirdrehab.org/DirectNF.htm>
- Short, Frederick T. and Sandy Wyllie-Echeverria, 1995. *Natural and Human-induced Disturbance of Seagrasses*. Environmental Conservation, 23(1):17-27.
- Smith, Kenneth N. 1993. *Manatee Habitat and Human-related Threats to Seagrass in Florida: A Review*. Department of Environmental Protection, Division of Marine Resources, Office of Protected Species Management. Tallahassee, Florida.

## REFERENCES

- South Atlantic Fishery Management Council. 1998. *Final Comprehensive Amendment Addressing Essential Fish Habitat In Fishery Management Plans of the South Atlantic Region*. NOAA. <http://www.safmc.noaa.gov/safmcweb/Habitat/NMFSFEFHRecs.pdf>
- South Atlantic Fishery Management Council. 1998. *Final Habitat Plan for the South Atlantic Region: Essential Fish Habitat Requirements for Fishery Management Plans of the South Atlantic Fishery Management Council. The Shrimp Fishery Management Plan, The Red Drum Fishery Management Plan, The Snapper Grouper Fishery Management Plan, The Coastal Migratory Pelagics Fishery Management Plan, The Golden Crab Fishery Management Plan, The Spiny Lobster Fishery Management Plan, The Coral, Coral Reefs, And Live/Hard Bottom Habitat Fishery Management Plan, The Sargassum Habitat Fishery Management Plan, and The Calico Scallop Fishery Management Plan*. Charleston, South Carolina. Available on the Internet at <http://www.safmc.noaa.gov/safmcweb/Habitat/EFHPlan%2010%2F98/EFHPLANdefault.html>.
- Speights, Alvin. 2002. Florida Division of Motor Vehicles, Personal communications, August 2002.
- State of Florida, State Parks website. 2001. Accessed 24 Sept. 2001 at <http://www.pennekampark.com/>.
- Stokes, Donald and Lillian Stokes. 1996. *Stokes Field Guide to Birds Eastern Region*. Little, Brown and Company.
- Thayer, Gordon W. 1992. *Restoring the Nation's Marine Environment*. Maryland Sea Grant College, College Park, MD.
- Thayer, G.W., D.A. Wolfe and R.B. Williams. 1975. *The Impact of Man on Seagrass Systems*. American Scientist. 63:288-296.
- U.S. Coast Guard. 1999. *Reference Guide to State Boating Laws*, 5<sup>th</sup> Edition. Chris Moore and Ron Sarver, Editors. National Association of State Boating Law Administrators.
- U.S. Department of Commerce, Census Bureau. 2000. 2000 Census Data. Accessed 18 Sept 2001 at <http://www.census.gov>.
- U.S. Department of Defense, Department of the Air Force. 201. Second Supplemental Record of Decision: Disposal of Portions of the Former Homestead Air Force Base, Florida. 15 Jan. 2001.
- U.S. Department of Transportation, Bureau of Transportation Statistics. 2000. Omnibus Survey: Summary for 2000. Accessed 18 Sept 2001 at [http://www.bts.gov/omnibus/results/september/Sept\\_report.htm](http://www.bts.gov/omnibus/results/september/Sept_report.htm).
- U.S. Fish and Wildlife Service. 1993. *Draft Florida Manatee Recovery Plan*. Florida Manatee Recovery Team, USFWS, Atlanta, Georgia.

- U.S. Environmental Protection Agency (EPA), Office of Water, 1993. *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*. EPA-840-B-93-001c.
- U.S. Environmental Protection Agency (EPA), Office of Air and Radiation. 1994. *The Effects of Marine Engine Exhaust Emissions on Water Quality: Summary of Findings of Various Research Studies*.
- Van Meter, Victoria. 1992. *Florida's Sea Turtles*. Florida Power and Light Company.
- West, Jeff. 2001. Manager, Matheson Hammock Marina, Miami-Dade Parks and Recreation. Personal communication, 26 Sept. 2001.
- Winston, Donald. 2001. Manager, Homestead Bayfront Park, Miami-Dade Parks and Recreation. Personal communication, 24 Sept. 2001.
- Witzell, W.N. 1998. *The Origin of the Florida Sponge Fishery*. Marine Fisheries Review 60 (1) 1998.
- Zieman, J.C. 1976. The ecological effects of physical damage from motor boats on turtle grass beds in southern Florida. *Aquatic Botany*. 2:127-139.
- Zieman, Joseph C. 1982. *The Ecology of the Seagrasses of south Florida: A Community Profile*. National Coastal Ecosystems Team, Office of Biological Services, US Department of the Interior. Department of Fish and Wildlife Service. Washington, D.C.
- Zieman, Joseph C. 1968. *A Study of the Growth and Decomposition of the Sea Grass, Thalassia Testudinum*. University of Miami, Coral Gables, FL.

## INDEX OF KEY WORDS

Affected Environment, xxiv, 87

Agencies, xxiii, xxvii, 18, 62, 95, 103, 104, 109, 164, 169, 217

Agreements, vii, 28

Air Quality, 17

Alternatives, 1, vi, viii, ix, x, xi, xii, xiii, xiv, xv, xvi, xvii, xviii, xix, xx, xxi, xxiii, xxiv, xxv, xxvi, xxvii, 5, 21, 22, 23, 24, 26, 27, 29, 30, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 95, 97, 98, 99, 100, 101, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 117, 118, 119, 120, 121, 124, 125, 126, 127, 129, 130, 132, 133, 134, 135, 138, 139, 140, 141, 143, 144, 145, 146, 148, 149, 150, 151, 152, 153, 154, 155, 157, 158, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 242, 243

Analysis, xi, xxv, 16, 19, 49, 87, 88, 93, 122, 215

Aquatic, 13, 19, 41, 102, 166, 213, 214, 217

Artist, 24, 26

Bay, iii, ix, x, xiii, xiv, 1, 2, 10, 13, 14, 17, 19, 20, 24, 35, 37, 52, 53, 61, 62, 64, 67, 68, 69, 70, 73, 76, 77, 78, 80, 81, 82, 85, 86, 95, 97, 98, 99, 104, 105, 106, 109, 110, 111, 112, 113, 115, 116, 117, 118, 119, 120, 121, 131, 138, 141, 143, 157, 165, 166, 167, 173, 213, 214, 215, 240, 241, 243, 249

Biological, vi, xiii, xxiii, xxiv, xxv, 13, 17, 41, 52, 64, 70, 72, 73, 80, 89, 94, 102, 117, 120, 217, 247

Biscayne National Park, 1, iii, iv, v, ix, x, xvii, xxiv, xxvii, 1, 5, 6, 9, 10, 11, 12, 13, 16, 17, 18, 19, 20, 21, 22, 24, 25, 33, 34, 35, 37, 39, 46, 56, 67, 68, 69, 70, 72, 73, 75, 76, 77, 80,

83, 85, 88, 89, 90, 91, 92, 93, 103, 106, 111, 112, 117, 122, 129, 130, 131, 132, 133, 136, 137, 138, 147, 153, 157, 159, 160, 163, 168, 170, 173, 179, 180, 213, 214, 215, 237, 245, 271

Boating, 10, 78, 102, 162, 167, 213, 216

Boats, xxvii, 25, 26, 31, 39, 40, 78, 100, 130, 166, 167, 213

Camping, 77, 241

Costs, viii, ix, 50

Cultural, vi, xvi, xxiii, xxiv, xxv, 14, 44, 55, 75, 90, 123, 160, 163, 248

Cumulative Actions, xxiii, 17, 19

Damage, 213, 222

Diving, 166, 167

Economic, 19, 73, 152

Effect, 131

Effects, xxv, xxvi, xxvii, 87, 89, 90, 91, 93, 97, 98, 99, 100, 102, 104, 105, 106, 107, 108, 109, 110, 112, 113, 114, 115, 118, 119, 120, 121, 122, 125, 126, 127, 131, 132, 133, 134, 138, 139, 140, 143, 144, 145, 148, 149, 150, 151, 154, 155, 156, 217

Endangered, vi, xiv, xxiii, xxiv, xxv, xxvii, 14, 43, 53, 68, 70, 71, 89, 102, 111, 160

Environmental, 1, iii, iv, ix, x, xi, xxv, 1, 5, 12, 13, 16, 17, 18, 19, 21, 37, 38, 39, 49, 62, 73, 78, 79, 87, 93, 95, 103, 104, 109, 122, 123, 124, 132, 142, 152, 160, 161, 162, 164, 166, 167, 169, 171, 172, 178, 213, 214, 215, 217, 242, 244



Federal, viii, 30, 71, 93, 95, 103, 104, 137, 142, 152, 159, 164, 181, 213

Fish, 19, 68, 71, 73, 89, 95, 111, 116, 160, 164, 166, 167, 216, 217

Fishing, 27, 77, 131, 167

Florida, 1, iii, v, xi, xii, 1, 9, 10, 11, 12, 13, 19, 20, 21, 23, 24, 35, 36, 38, 51, 61, 62, 64, 67, 68, 70, 71, 75, 77, 78, 79, 84, 85, 95, 96, 98, 104, 107, 110, 111, 115, 118, 121, 123, 124, 127, 131, 159, 160, 162, 164, 165, 166, 167, 169, 170, 171, 172, 179, 180, 181, 213, 214, 215, 216, 217, 243, 244, 249

Habitat, xxiv, 19, 69, 73, 116, 162, 164, 166, 213, 215, 216, 247

Historic, xi, xxiv, xxvii, 15, 20, 38, 44, 75, 76, 90, 122, 123, 124, 127, 160, 164, 174, 179, 248, 250

Hurricane, iii, 1, 11, 12, 76, 84, 85, 127, 157, 213

Impacts, xi, xii, xiii, xiv, xv, xvi, xvii, xviii, xix, xx, xxi, xxiv, xxv, xxvi, xxvii, 49, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 70, 91, 95, 98, 99, 100, 104, 107, 108, 111, 113, 114, 117, 118, 119, 120, 122, 124, 125, 126, 129, 132, 134, 136, 138, 139, 140, 142, 143, 144, 145, 147, 148, 149, 150, 151, 152, 154, 155, 158, 214

Indian, 18, 64, 68, 70, 71, 164, 270

Justice, 17, 164, 221

Leaseholders, viii, 30

Leases, viii, x, xxiv, 30, 34, 38

Legislature, 20

Lessees, 32

Maintenance, ix, xxvi, 83, 157

Management, 1, iii, iv, vi, viii, ix, x, xii, xiii, xiv, xv, xvi, xvii, xviii, xix, xx, xxi, xxiii,

xxiv, xxv, xxvi, xxvii, 1, 5, 9, 17, 18, 19, 20, 33, 37, 40, 41, 42, 43, 44, 45, 46, 47, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 73, 88, 89, 90, 91, 92, 95, 98, 107, 110, 113, 115, 116, 118, 121, 123, 125, 128, 131, 132, 136, 137, 139, 144, 147, 148, 149, 154, 157, 160, 162, 163, 164, 169, 170, 171, 213, 214, 215, 216, 217, 237, 245, 247

Methodology, xxv, xxvi, 13, 87, 94, 102, 111, 116, 122, 128, 136, 142, 147, 152

Miami, iii, xxvii, 2, 6, 10, 11, 17, 19, 23, 24, 35, 46, 61, 62, 75, 76, 77, 78, 79, 82, 84, 85, 86, 95, 97, 98, 112, 116, 123, 129, 130, 134, 138, 141, 142, 148, 150, 151, 153, 159, 160, 162, 164, 165, 166, 167, 174, 179, 180, 213, 214, 217, 230, 237, 239, 241, 242, 243, 244

Mission, iv, v, xxiii, 6

Mitigation, xxiii, 22, 89, 90, 91, 92, 171, 213

National Park Service, 1, iii, iv, v, vi, vii, viii, ix, x, xii, xiii, xiv, xv, xvi, xvii, xviii, xix, xx, xxi, xxiii, xxiv, xxv, xxvi, xxvii, 1, 2, 5, 9, 11, 12, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 71, 78, 79, 83, 88, 93, 95, 98, 99, 100, 101, 103, 104, 105, 107, 108, 109, 110, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 125, 126, 127, 128, 129, 130, 132, 136, 137, 139, 140, 141, 142, 144, 145, 146, 147, 148, 149, 150, 151, 152, 154, 157, 159, 160, 161, 162, 163, 164, 168, 170, 171, 173, 174, 175, 177, 179, 181, 214, 215, 236, 237, 243, 248

Natural, iii, 9, 18, 19, 80, 89, 91, 95, 103, 162, 164, 166, 213, 215

NEPA, 5, 17, 178, 237

Plan, 1, iii, iv, xxiii, xxvii, 1, 5, 18, 19, 20, 61, 62, 73, 89, 90, 91, 92, 93, 95, 110, 115, 121, 131, 157, 160, 213, 214, 215, 216, 237

Policies, ix, x, xi, xxv, xxvi, 5, 12, 17, 18, 21, 37, 38, 73, 88, 93, 95, 103, 111, 116, 122,

## REFERENCES

- 123, 124, 128, 136, 137, 142, 147, 148, 152, 161, 178, 213, 215, 244
- Prehistoric, 76
- Purpose, iii, iv, xxiii, xxiv, 1, 6, 39, 93, 157, 173, 174, 175, 179, 180
- Recreation, 85, 164, 213, 217
- Regulations, xxv, xxvi, 18, 19, 64, 93, 95, 103, 104, 111, 116, 123, 128, 136, 137, 142, 147, 152, 181, 213
- Safety, iv, vii, ix, xvii, xxiii, xxiv, xxvi, 5, 6, 10, 15, 27, 31, 33, 34, 35, 39, 44, 50, 56, 61, 62, 67, 77, 85, 97, 109, 114, 120, 121, 131, 134, 162, 173, 243
- Safety Valve, iv, ix, 5, 6, 10, 33, 34, 35, 39, 50, 61, 62, 67, 97, 109, 114, 120, 121, 131, 134, 173, 243
- School, 24, 79, 116, 130, 132, 162, 166, 213, 214, 239, 240, 242, 243, 244
- Significance, iv, v, xxiii, 6, 9
- Snorkeling, 77, 131
- Socioeconomic, vi, 90
- Spills, 6
- State, 12, 71, 75, 77, 95, 123, 124, 127, 160, 164, 165, 166, 167, 179, 181, 216, 248, 249
- Stiltsville, 1, iii, iv, vi, vii, viii, ix, x, xi, xii, xiii, xiv, xv, xvi, xvii, xviii, xix, xx, xxi, xxiv, xxvii, 1, 2, 5, 6, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 85, 86, 87, 93, 94, 96, 97, 98, 99, 100, 101, 103, 104, 105, 106, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 124, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 157, 158, 159, 160, 170, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 213, 215, 237, 238, 239, 240, 241, 242, 243, 244, 245, 247, 248, 249, 250
- Structures, ix, xii, xiii, xiv, xv, xvi, xvii, xviii, xix, xx, xxi, xxiii, xxiv, xxv, xxvi, xxvii, 16, 26, 27, 28, 31, 40, 41, 42, 43, 44, 45, 46, 47, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 100, 102, 109, 114, 120, 126, 133, 134, 140, 145, 151, 155, 213, 215, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 240, 243
- Threatened, xiv, xxiii, xxiv, xxv, xxvii, 14, 43, 53, 68, 70, 71, 102
- Urban, 61
- Urbanization, 19
- Visitors, v, vi, ix, xvii, xxiii, xxiv, xxvi, xxvii, 9, 15, 24, 26, 33, 44, 45, 50, 56, 77, 80, 83, 85, 90, 91, 129, 130, 131, 134, 137, 167, 213
- Visual, vi, xix, xxiii, xxiv, xxvi, 15, 46, 58, 75, 82, 91
- Wetlands, 17
- Wilderness, 1, 17, 167, 215

## **APPENDIX A DESCRIPTION OF THE STILTSVILLE STRUCTURES**

All structures were inspected during November 2000 by Global Construction Services, Inc., an independent contractor hired by the U.S. Department of Justice to perform the structure inspections. The information found in this appendix was summarized from the Global Construction Services engineering reports.

After inspection, they rated each structure according to three different categories of susceptibility to further damage: high susceptibility, moderate susceptibility, and low susceptibility. Global Construction Services describes these categories as:

High Susceptibility: A structure has already experienced a significant amount of degradation/deterioration/damage to its major and primary building/structural systems and/or its nonstructural elements. Existing conditions with external environment may result in further degradation/deterioration/damage of these elements and components, and may sustain injuries to people/animal in or around the structure.

Moderate Susceptibility: A structure has not yet experienced significant degradation/deterioration/damage to its major and primary building/structural systems and/or its nonstructural elements, which would lead to further degradation/deterioration/damage due to existing conditions with external environment.

Low Susceptibility: A structure is not expected to experience any degradation/deterioration/damage when subjected to existing conditions with external environment.

## **STRUCTURE 2146**

### **SUSCEPTIBILITY RATING: HIGH**

Structure 2146 is a two-level building supported by concrete pilings with a dock supported by wood pilings. The first level is an open dock area and the second level is a cabin. The upper level is approximately 8 feet-6 inches above the dock and accessible by a stairway with a locked hatchway door. During the inspection, interior access was not available, but there does not appear to be any toilet facilities, permanent electrical power or a water supply at this structure.

Access to the interior of the structure was not available.

### **STRUCTURAL SYSTEM**

The main support beams for the floor joists consist of 12 inch x 12 inch concrete piling with doubled up 2 x 12s. The floor joists are 2 x 10s spaced at 16 inches on center. Many of the joists are infected with dry rot and replacement joists have been installed next to them, but are not fastened to the original joist. In addition, the length of the 2 x 10s is longer than recommended. The inspector concludes that the existing floor system is not strong enough to support the 100 pounds per square foot floor load usually required by building codes in public places.

The 2 x 12 beams are held in place with a pair of bolts on either side of the piling. Relieving angles (heavy pieces of steel which are bolted into the pilings) are installed under the 2 x 12 beams to support the load. The inspector noted three concerns: the relieving angles are severely rusted to the point that their structural integrity may be degraded; the bolted connections may not be adequate; and the hurricane straps appeared to be weathered with some rust.

### **CONCRETE PILING**

Damage is evident to many of the piling at this structure. Most of the damage is between the water line and approximately 5 feet above the water line. The reinforcing steel is rusting due to exposure caused by the surface concrete being broken away. A detailed structural analysis is needed to determine if this damage has degraded the structural integrity of the piling.

### **CABIN AND DECK**

The siding on the cabin is a 12-inch drop siding that appears to be in fairly good condition. The windows are shuttered by plywood and the one entry door has triple locks. The wooden deck consists of 2 x 6 planks and extends all the way around the cabin. The deck was severely rotted in places and in an overall deteriorated condition. The deck is surrounded by a railing 34 inches high with three horizontal 2 x 4s: the first at toe level, the second 11 inches off the deck and the third 21 inches off the deck. This does not meet the building code requirement of horizontal supports being less than 4 inches apart.

## **DOCK**

Both wood and concrete piling support the dock. The deck on the dock is constructed of 2 x 6 planks that appear to be in good condition. The dock appears to accommodate 3 or 4 small boats and has no additional structures.

## **OTHER ISSUES**

It appears no fire protection system is installed on Structure 2146. The local fire marshal or other controlling authority should coordinate this requirement if necessary.

Handicapped access to the cabin level is not possible with the current configuration of the dock. The dock would have to be expanded to accommodate approximately 100 feet of ramp necessary to travel the vertical distance between the dock and the upper level.

Only one exit currently exists to the upper level cabin. The building code requires a minimum of two exits from every floor above the first floor (subject to rulings by the local fire marshal or the controlling authority).

## **RECOMMENDATIONS**

The inspector recommends that Structure 2146 be closed to public access until structural upgrades are performed. A local structural engineer should be hired to thoroughly evaluate the structural system and to design repairs and upgrades.

## **STRUCTURE 2157**

### **SUSCEPTIBILITY RATING: HIGH**

Structure 2157 is a small, four-room cabin supported by an A-frame structural system. The cabin is approximately 15 feet x 40 feet and surrounded by a wooden deck which connects to the main dock by a ramp. There is an additional outbuilding (approximately 16 feet x 16 feet) that contains a small restroom and storage area. The cabin contains a small kitchen and has window openings on all sides of the structure. The windows do not have frames or glass, but have heavy wood shutters for covering when not in use.

### **STRUCTURAL SYSTEM**

The structural system of Structure 2157 is an A-frame type system. Heavy timber members form the horizontal cross braces and are bolted to the pilings. Each piling is set in a large concrete anchor that appears to be resting on the bottom of the bay as opposed to being embedded. One of the pilings has "checked" (a lengthwise split) and has a small area of dry rot. The other pilings appear to be in good condition.

The cross braces consist of 4 x 12s installed at each "A". Many of these cross braces are quite deteriorated and contain extensive dry rot. Repairs have been made in one location. The bracing between the adjacent "A"s is provided by the exterior walls of the cabin and by "X" bracing which consists of steel angles. At least one steel angle has rusted completely through and others are so heavily corroded that their structural capacity may be diminished.

There is an extensive amount of dry rot visible in the wood of this structure, including some of the floor joists. The entire floor appears to be deteriorating and in a weakened condition; in fact, the center of the floor is sagging approximately 3 inches.

### **CABIN AND OUTBUILDING**

The entire cabin area is in very poor condition and shows significant deterioration. The floor has extensive dry rot; many boards are loose or missing, and one section has a hole where the ocean is visible below. The interior wall and ceiling surfaces consist mostly of painted and unpainted plywood. The ceiling shows evidence of previous water leaks. The kitchen has a small range, small refrigerator, and a sink which drains directly to the ocean below.

The outbuilding is largely used as a storage building with one corner walled off to create an area for an organic type toilet (zero discharge). The walls appear to be in good condition although the ceiling joists are water stained. An outdoor sitting area has been created on the roof of the outbuilding which is accessible by a ramp from the deck. No hurricane straps are visible.

### **DOCK AND DECK**

The main dock is approximately seven feet wide with a narrow "finger" pier which is about 3 feet wide. The dock is supported by pilings consisting of pressure treated timber and appear to be in good condition. The structural beams and decking also appear to be in good condition.

The planks of the wooden deck, which completely surrounds the cabin, are weathered and show minimal dry rot. The planks are irregularly spaced and could be a tripping hazard. The railing around the deck is 32 inches high - lower than the building code requirement of 42 inches.

### **OTHER ISSUES**

Structure 2157 does not have enough space to install a handicapped access ramp without expanding the dock; however, the existing ramp, from the dock to the deck, could be modified to allow access via wheelchair.

A fire protection system is not installed in this structure. The local fire marshal or other controlling authority would determine if this was required.

### **RECOMMENDATIONS**

The inspector recommends that Structure 2157 be closed to public use and demolished. The deterioration throughout the cabin and support structures is to the point of repairs being more costly than building a new structure. Some of the pilings could be salvaged if determined to be structurally sound.

## **STRUCTURE 2159**

### **SUSCEPTIBILITY RATING: MODERATE**

Structure 2159 consists of a one-room cabin surrounded by a wooden deck, on the upper level and a dock on the first level. Access to the second level is provided by a single staircase and there is a small storage room on the first level. This structure has no toilet facilities, water supply, or permanent source of electrical power.

### **STRUCTURAL SYSTEM**

The structural system for Structure 2159 consists of 12 inch x 12 inch concrete piling with 4 x 12 timber support beams bolted directly to the piling. The floor joists are 2 x 8s with a maximum span of 12 foot-6 inches. The existing floor does not appear to be strong enough to support 100 pounds per square foot floor load as usually required in public places.

In addition, the beam/piling bolted connections are a serious structural concern due to severe rust and the fact that the entire load of the structure rests on the bolt between the piling and the 4 x 12. There was evidence that one of the 4 x 12s has been repaired and several of the concrete pilings have been repaired with a concrete patch. One piling is cracked. Numerous hurricane straps are rusted completely through and many others are in a deteriorated condition. Several have been replaced within the last few years.

### **CABIN**

The cabin is a single room approximately 20 feet x 30 feet. The walls are covered with varnished plywood panels and the floor is carpeted. The windows do not contain either glass or frames, but are covered by removable, heavy wood framed storm shutters. The interior appears to be clean and in good condition. The roof is sheathed with plywood and the trusses are fastened to the top of the exterior wall with hurricane straps. No evidence of leaks was observed.

The cabin has some electrical wiring, but no electrical panel or point of attachment for a generator was found. A kitchen sink and a gas range are installed in one corner. The exterior siding on the cabin is T111 siding which is unpainted and in good condition. The roof is a three tab composition shingle roof which appears to be in good condition.

### **DECK AND DOCK**

The deck goes all around the cabin and consists of 2 x 6 planks that appear to be in good condition. The perimeter railing is 36 inches high which does not meet the building code requirement of a height of 42 inches. The dock is also constructed of 2 x 6 planks and appears to be in good condition. There is a small wood framed storage building located on the dock under a corner of the cabin. The existing metal door is rusted, but otherwise the building is in good condition. No hurricane straps were evident connecting the joists underneath the dock deck to the 4 x 12 beams bolted to the pilings. The dock is large enough to accommodate 2 or 3 small boats.



## **OTHER ISSUES**

It appears no fire protection system is installed on Structure 2159. The local Fire Marshall or other controlling authority should coordinate this requirement if necessary.

Handicapped access to the cabin level is not possible with the current configuration of the dock. The dock would have to be expanded to accommodate approximately 100 feet of ramp necessary to travel the vertical distance between the dock and the upper level.

Only one exit currently exists to the upper level cabin. The building code requires a minimum of two exits from every floor above the first floor (subject to rulings by the local fire marshal or the controlling authority).

## **RECOMMENDATIONS**

The interior of the cabin would require only a minor amount of work to make it suitable for use by the public; however, the inspector recommends that Structure 2159 be closed to public access until structural upgrades and repairs are performed. A local structural engineer should be hired to thoroughly evaluate the structural system and to design repairs and upgrades.

## **STRUCTURE 2167**

### **SUSCEPTIBILITY RATING: MODERATE TO HIGH**

Structure 2167 is a two level structure supported by concrete piling. The lower level is a dock which extends underneath the upper level and includes a small storage building. A stairway provides access to the upper level which consists of three structures connected by the deck. The largest structure is surrounded on three sides by the walkway/deck. A lot of PVC piping and electrical wiring is visible, but much of it is deteriorated and apparently not functional. There does not appear to be a permanent water supply or permanent source of electrical power.

Access to the interior of the structure was not available.

### **STRUCTURAL SYSTEM**

The structural system for Structure 2167 consists of 2.5 inch x 11 inch main support beams bolted to 12 x 12 concrete piling. The existing floor, comprised of 2 x 10s, does not appear to be strong enough to support the 100 pounds per square foot floor load usually required in public places.

One concern at this structure are the beam/piling connections. Two of the main support beams are severely cracked and many of the bolts are heavily rusted with no relieving angles installed to distribute the weight of the structure. Several of the "X" braces providing lateral support are broken and no longer functional, and others are anchored in the water to piling with resulting severe rust. Many hurricane straps are severely deteriorated. In addition, several of the concrete piling have been damaged and show evidence of attempted repairs. The entire structural system at Structure 2167 should be evaluated, including the adequacy of the 2.5 inch x 11 inch main beams, the 2 x 10 floor joist system and the lateral stability of the structure.

### **CABIN AND STORAGE BUILDING**

The exterior of the cabin is constructed with a board and batten type siding which appears to be in good condition. The roof is shallow pitched, covered with a three tab composition shingle, and appears aged and weathered. The area over the breezeway appears to be damaged. Next to the main cabin is a smaller structure which appears to be a bunk room. The other small structure on the upper level may be a generator room. On the lower level, there is a small building that is probably used for storage and may house a holding tank.

### **DECK AND DOCK**

The upper level deck is constructed of 2 x 6 planks and appears to be in fairly good condition. The railing around the upper deck is 40 inches high with no intermediate railings which does not meet the building code. The code requires railings 42 inches in height with intermediate rails less than 4 inches apart.

The dock is also constructed of 2 x 6 planks and appears to be in good condition. The dock is large enough to accommodate seven or eight small boats.

## **OTHER ISSUES**

It appears no fire protection system is installed on Structure 2167. The local fire marshal or other controlling authority should coordinate this requirement if necessary.

Handicapped access to the cabin level is not possible with the current configuration of the dock. The dock would have to be expanded to accommodate approximately 100 feet of ramp necessary to travel the vertical distance between the dock and the upper level.

Only one exit currently exists to the upper level cabin. The building code requires a minimum of two exits from every floor above the first floor (subject to rulings by the local fire marshal or the controlling authority).

## **RECOMMENDATIONS**

The inspector recommends that Structure 2167 be closed to public access until structural upgrades are performed. A local structural engineer should be hired to thoroughly evaluate the structural system and to design repairs and upgrades.

## **STRUCTURE 2173**

### **SUSCEPTIBILITY RATING: MODERATE TO HIGH**

Structure 2173 is the Miami Springs Outboard Club. This is a two level structure supported by concrete piling. The first level is a large dock area which extends beneath the upper level, with a pier that extends 100 feet to the north and a second pier that extends 180 feet to the south. Access to the second level is provided by two staircases. Three small rooms are also on this level, apparently used for storage and restrooms. Moored near the restrooms is the hull of an old pontoon boat which has apparently been converted to a floating holding tank for the sanitary sewer system.

The upper level contains one large room with a small kitchen on one side. This cabin is surrounded by a wooden walkway which includes a large sitting area on one end. Also on this level is a separate structure that houses two restrooms. A generator housed on the first level appears to be the source of electrical power for this structure. A fresh water supply is not apparent.

Access to the interior of the structure was not available, but some of the interior was visible through the windows.

### **STRUCTURAL SYSTEM**

The structural system for Structure 2173 is comprised of 12 inch x 12 inch concrete piling. The main support beams are of several different types: 4 x 12s, 4 x 8s, doubled up 2 x 12s, and a 10 inch deep steel channel. The floor joists are 2 x 8s at 16 inches on center with spans as much as 19 feet-1 inch. The existing floor joist system does not appear to be strong enough to support the 100 pounds per square foot floor load typically required in public facilities.

The beam/piling connections are also a serious structural concern. Two types of connections have been used, a friction-type and a through-bolt type. One of the friction-type connections has apparently slipped, leaving a gap between the floor joist and the main support beam. Many of the connection bolts are severely rusted and their structural capacity may have been diminished. Also, the ability of the 4 x 12 main support beams to support the load adequately is questionable due to the length of the span between the piling. There is a measurable sag and visible dry rot in several of the main support beams underneath the deck. Some of the galvanized steel cables used to provide horizontal "X" bracing between the pilings are loose and the hurricane straps are severely rusted.

### **CABIN AND OUTBUILDINGS**

The main cabin is approximately 51 feet long x 21 feet wide with a vinyl tile floor and exposed roof system. The interior of the cabin appears to be in good condition. The exterior consists of lap siding and lanai-type windows. The roof is constructed with three tab composition shingles and also appears to be in good condition.

On the upper level there is one outbuilding which houses two restrooms and a small storage enclosure underneath the stairs. This enclosure may need to be removed as a fire hazard. On the lower level there are two structures, one is a combination restroom/storage facility and the other is a generator room. The roof of the generator room does not appear to have enough pitch to allow for proper drainage. The T111 plywood siding that covers the enclosures appears to be in good condition.

## **DECK AND DOCK**

The deck consists of 1 x 6 decking which is fairly weathered. It may be necessary to upgrade the decking to 2 x 6 to meet the required weight load for a public structure. The perimeter railing and intermediate rails do not meet the required height and spacing limits as specified by the building code.

Structure 2173 has a large dock system, consisting of 1 x 6 planks, supported by both wood and concrete piling. The wood is in good condition, but the bolts are heavily rusted and may need to be replaced. Several of the concrete piling supporting the dock have been damaged and rust from the reinforcing steel inside is visible. The water along the southern pier (180 feet long) appears to be too shallow for boat moorage. The northern pier (100 feet long) could accommodate 12 to 13 small boats.

## **OTHER ISSUES**

It appears no fire protection system is installed on Structure 2173. The local fire marshal or other controlling authority should coordinate this requirement if necessary.

Handicapped access to the cabin level could be added with some modifications to the current configuration of the dock. The dock area would have to be expanded to accommodate approximately 100 feet of ramp necessary to travel the vertical distance between the dock and the upper level. No additional pilings would be necessary.

The building code requires a minimum of two exits from every floor above the first floor (subject to rulings by the local fire marshal or the controlling authority). This structure has two exit stairways.

## **RECOMMENDATIONS**

The interior of the cabin would require only a minor amount of work to make it suitable for use by the public; however, the inspector recommends that Structure 2173 be closed to public access until structural upgrades are performed. A local structural engineer should be hired to thoroughly evaluate the structural system and to design repairs and upgrades.

## **STRUCTURE 2213**

### **SUSCEPTIBILITY RATING: MODERATE TO HIGH**

Structure 2213 is a two level structure supported by concrete pilings. The dock is the first level, which extends underneath the upper level, and has one small plywood enclosure. The second level, accessible by one stairway, contains one large cabin consisting of two rooms and one walled-off area. A large wooden deck surrounds the cabin and has a sitting area on each end. There do not appear to be any toilet facilities, water supply, or permanent source of electrical power at Structure 2213.

Access to the interior of the structure was not available, but some of the interior was visible through the windows.

### **STRUCTURAL SYSTEM**

12 inch x 12 inch concrete pilings with 12 inch x 13 inch timber beams comprise the structural system for Structure 2213. Deterioration was noted in the supporting 2 x 10s as well as in the decking on top of the 2 x 10s. This deterioration was widespread underneath the structure and appeared to be due to worms or termites, as opposed to dry rot. The maximum span of the 2 x 10 floor joists was 14 feet-3 inches. The floor does not appear to be strong enough to support the 100 pounds per square foot floor load typically required for public structures.

In addition to the structural concern regarding the damage by worms or termites, the hurricane straps (between the 2 x 10s and the heavy timber beams) and other steel connectors are severely rusted and deteriorated and should be replaced.

### **CABIN AND OUTBUILDINGS**

The dimensions of the cabin are approximately 36 feet x 30 feet, with the roof on one end overhanging 8 feet and the roof on the other end overhanging 10 feet to create a covered deck on each end. The doors, siding and soffit appear to be in good condition. The roof of the cabin is a mansard roof, missing some shingles, and the built-up section on top of the cabin is severely deteriorated and needs to be completely replaced.

The interior, as viewed through the windows, consists of two rooms and a small walled off area containing a storage tank. The flooring is unfinished plywood and the roof structure is framed with pre-manufactured trusses. Three plastic pipes drain from the cabin; one drains into the holding tank, but it is unknown what drains through the other two pipes.

A small plywood structure is located on the main dock, next to the stairway. This room apparently houses a holding tank into which gray water from the kitchen sink runs.

### **DECK AND DOCK**

The 2 x 6 and 2 x 10 planks of the deck appear to be in good condition from the top; however, the undersides of the planks are deteriorated due to worms and/or termites. The deck surrounds the cabin on three sides and has a sitting area on each end. The railing of the deck is 34 inches high with an

intermediate horizontal rail 14 inches above the deck. This does not meet the building code requirement of 42 inches in height with intermediate rails less than 4 inches apart.

The deck of the dock consists of 2 x 6 planks and appears to be in good condition. The main dock is supported by 12 x 12 concrete piling and the finger piers are supported by pressure treated wood piling. This dock would accommodate six or seven small boats.

## **OTHER ISSUES**

It appears no fire protection system is installed on Structure 2213. The local fire marshal or other controlling authority should coordinate this requirement if necessary.

Handicapped access to the cabin level is not possible with the current configuration of the dock. The dock would have to be expanded to accommodate approximately 108 feet of ramp necessary to travel the vertical distance between the dock and the upper level.

Only one exit currently exists to the upper level cabin. The building code requires a minimum of two exits from every floor above the first floor (subject to rulings by the local fire marshal or the controlling authority).

## **RECOMMENDATIONS**

The inspector recommends that Structure 2213 be closed to public access until structural upgrades are performed. A local structural engineer should be hired to thoroughly evaluate the structural system and to design repairs and upgrades. It is also recommended to repair or replace the roof.

## **STRUCTURE 2303**

### **SUSCEPTIBILITY RATING: HIGH**

Structure 2303 is a two level structure supported by concrete piling. The lower level is the dock which extends underneath the structure. The upper level, accessible by a stairway, contains a cabin and is surrounded by a wooden walkway with a deck at one end. At the end of the dock there is a stairway leading to an elevated platform which serves as an outdoor sitting area. There does not appear to be a fresh water supply or a permanent electrical power source at this structure. The availability of toilet facilities is unknown. Access to the interior of the structure was not available and all of the windows were shuttered and locked.

### **STRUCTURAL SYSTEM**

This structure is supported by 12 inch x 12 inch concrete pilings with 4 x 10 support beams bolted to the piling. The 2 x 10 floor joists are spaced at approximately 16 inches on center and the maximum span was measured to be 16 feet. The floor does not appear to be strong enough to support the 100 pounds per square foot floor load typically required for public structures.

Of serious structural concern are the 4 x 10 beam/piling bolted connections. The wooden 4 x 10s are bolted directly to the concrete pilings with no relieving angles to reduce the stress on the bolts, and the bolts are severely rusted and may have a reduced capacity. The floor joists and 4 x 10 support beams appear to be in good condition.

Many of the hurricane straps are severely rusted and deteriorated. Several have rusted through completely and only a few have been replaced. Several of the concrete piling have damage between the water level and approximately 5 feet above the water level resulting in possible weakening of the structural integrity of the pilings.

### **CABIN AND OUTBUILDINGS**

The exterior of the cabin is covered by 3/4 inch thick, painted plywood with unpainted plywood soffit above the walkways around the cabin - all showing signs of deterioration and lack of maintenance. The birdscreen covering the linear vents has deteriorated or is missing. Visible nail plates attached to the roof trusses were severely rusted, almost to the point of rusting completely through and being non-functional. The degradation of the nail plates is a very serious concern and the entire structure must be evaluated before repair or replace decisions can be made.

Access to the roof was not available, but based on water stains seen on the soffits and the rusty nail plates, the roof appears to be leaking and will need to be repaired.

On the dock beneath the cabin is one plywood enclosure that appears to be used for storage and housing of a large fiberglass tank, possibly used for collecting rainwater. The tank had an overflow pipe which would release excess water into the ocean.



## **DECK AND DOCK**

The perimeter railing of the deck around the cabin is 32.5 inches high with an intermediate horizontal rail at 15 inches. This does not meet the building code requirement of 42 inches in height and intermediate rails less than 4 inches apart. The dock is constructed of 2 x 6 planks and appears to be in good condition. An elevated sitting area or deck has been built on one end of the dock, but the stairway to this deck has large gaps between the planks of the stair treads making it non-compliant with the building code. A guardrail at the far end has a missing section that must be replaced. The dock appears able to accommodate five to six small boats.

## **OTHER ISSUES**

It appears no fire protection system is installed on Structure 2303. The local fire marshal or other controlling authority should coordinate this requirement if necessary.

Handicapped access to the cabin level is not possible with the current configuration of the dock. The dock would have to be expanded to accommodate approximately 100 feet of ramp necessary to travel the vertical distance between the dock and the upper level. Only one exit currently exists to the upper level cabin. The building code requires a minimum of two exits from every floor above the first floor (subject to rulings by the local fire marshal or the controlling authority).

## **RECOMMENDATIONS**

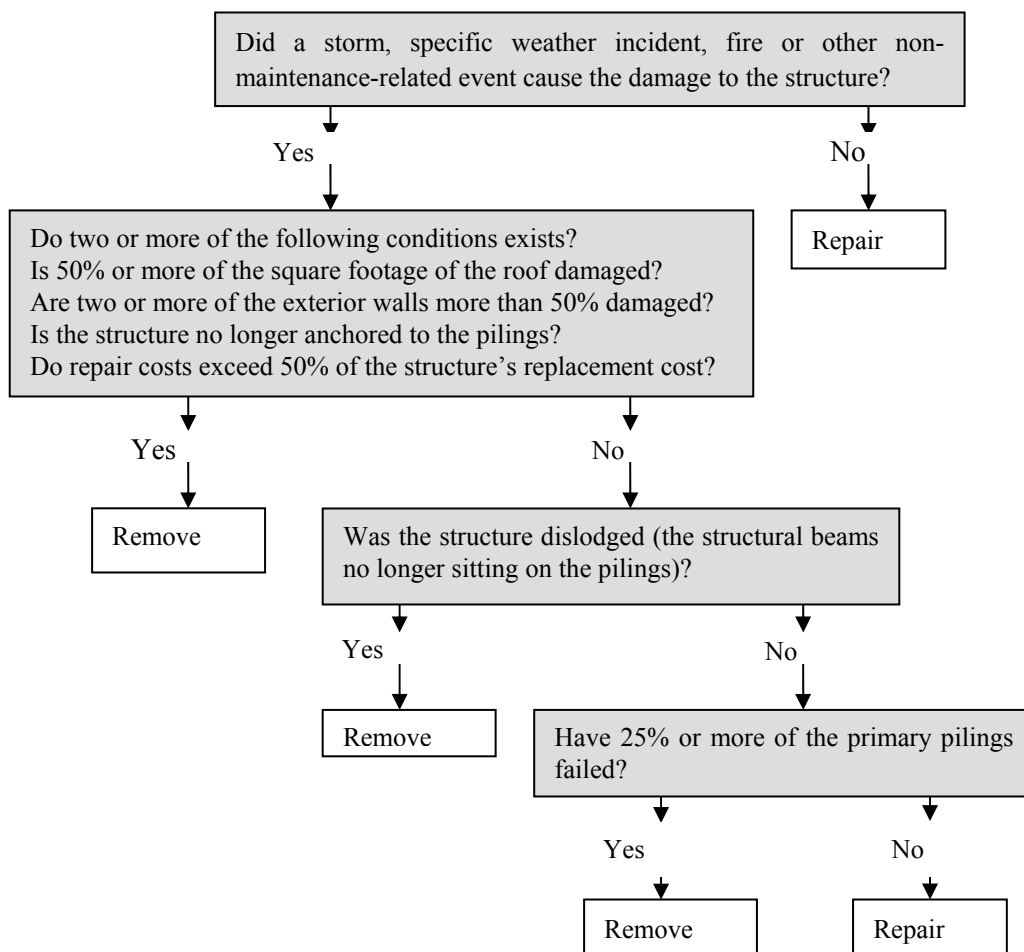
The inspector recommends that Structure 2303 be closed to public access until structural upgrades are performed and until a complete and thorough investigation into the structural integrity of the roof system is performed. A local structural engineer should be hired to thoroughly evaluate the structural system and to design repairs and upgrades. It is also recommended that the storage enclosure on the dock be removed, as well as the piping for the drainage system, and the existing electrical system. The elevated sitting area at the end of the dock may remain, but the stairs should be removed and replaced with stairs in compliance with building code.

## APPENDIX B

### DECISION TREE FLOW DIAGRAM

#### CRITERIA USED TO DETERMINE WHETHER A DAMAGED STRUCTURE SHOULD BE REMOVED OR REPAIRED

Note: For alternatives that involve National Park Service management of the structures, repairs would be contingent upon the availability of funding.



**APPENDIX C**  
**STILTSVILLE COMMITTEE REPORT**  
**FOR THE**  
**NATIONAL PARK SERVICE ADVISORY BOARD**  
**MAY 4-5, 2002**

The Stiltsville Advisory Committee, having met in Miami on May 4-5, 2002, recommends to the National Park Service Advisory Board that:

1. Consistent with National Park Service (“National Park Service”) ownership and control, but in recognition of the stakeholders’ intent to organize a Stiltsville Trust for purposes of managing the Stiltsville structures pursuant to a Memorandum of Understanding (“MOU”) with the National Park Service, the National Park Service begin immediately to develop a special use permit (or similar) for all seven current houses for such period as will be required to fully document and implement these recommendations;
2. Beginning immediately, the National Park Service complete revisions of its General Management Plan and preparation of a NEPA environmental impact statement to incorporate and document the preferred alternative for long-term management of the Stiltsville structures which is herein recommended;
3. Beginning immediately, stakeholders, in cooperation with the National Park Service, proceed to organize a Stiltsville Trust, which will qualify as a 501(c)(3) non-profit, tax exempt institution, whose purpose it will be to negotiate a long-term cooperative agreement with the National Park Service for management of the Stiltsville structures, so as to provide (i) enhanced public access to the Stiltsville structures, (ii) consideration of continued but limited use of the structures by current occupants, on terms and conditions to be established by the Trust, (iii) stabilization and maintenance of the Stiltsville structures using funds raised for this purpose from public, private and philanthropic sources; and (iv) equitable integration of public and private use of the Stiltsville structures, in recognition of public purposes identified in the Report of May 17, 2001 and such financial contribution to stabilization and maintenance as may be made by current occupants;
4. Effective upon organization of the Stiltsville Trust, the National Park Service and Trust negotiate a mutually agreeable Memorandum of Understanding (or similar), for purposes of accomplishing the Trust’s objectives, and consistent with National Park Service overall responsibilities for management of the natural and cultural resources of the Biscayne National Park;

## REFERENCES

5. The foregoing occur as expeditiously as possible, in order that the Stiltsville Trust be able to assume its responsibilities for management of the Stiltsville structures pursuant to an agreed MOU immediately upon completion of the documentation described in paragraph 4; and
6. There is a general understanding and acknowledgement that the foregoing are statements, expressions and recommendations of the parties in their capacities as members of this Committee only, and these statements, expressions and recommendations are not intended to alter, affect or impair the legal rights or standing of the parties, including the current Stiltsville occupants.

**APPENDIX D**

**A PROPOSAL FOR JOINT STEWARDSHIP OF STILTSVILLE AND  
MIAMI'S MARINE ECOSYSTEMS**

**STILTSVILLE AND THE FUTURE OF BISCAYNE BAY**

A Proposal for Joint Stewardship of Stiltsville and Miami's Marine Ecosystems

Submitted to  
The Stiltsville Committee  
of  
The National Park System Advisory Board

By members of  
  
*MAST Academy*  
*Ransom Everglades School*  
and  
*The Rosensteel School of Marine and Atmospheric Science*

May 10, 2001

All workable solutions to environmental preservation involve partnerships between private and public interests and the grand spirit of compromise. The recent history of Stiltsville illustrates that such compromises are possible. At this time, the opportunity exists to capitalize on the “natural capital” of the park by using the fixed structures of Stiltsville to foster education and research, in a manner that will contribute to the body of scientific knowledge and the environmental health of Biscayne Bay, and also enlighten our youth, the stewards and leaders of the future<sup>1</sup>

### Proposal Goal

The aim of this proposal is to suggest that Stiltsville become a base for research and education in a partnership between local schools (initially *Ransom Everglades* and *MAST Academy*) and research institutions (RSMAS: *Rosensteil School of Marine and Atmospheric Science* and NQAA: *National Oceanic and Atmospheric Administration*)

### Proposed Uses for Stiltsville Structures

1. Attach *Seakeepers*<sup>1</sup> research data station to Stiltsville structure.
2. Provide a base for education and research programs in the flats and Tidal flow areas of Stiltsville.

#### *Research Applications*

- The data gleaned by the *Seakeepers* module would be forwarded to a central database and made available for use by scientists and educators worldwide via internet connection.<sup>2</sup>
- This data station would complement one already stationed at the RSMAS dock in Bear Cut as well as a proposed station outside of Ransom Everglades Upper School, on the western side of the Bay. Applications of this data include long term monitoring of the Bay’s health and guidance for city planning and environmental policy.
- School groups would participate in long-term sampling and ecosystem surveys that could be of value for research institutes like RSMAS and NOAA.

---

<sup>1</sup> Notably, this data would be extremely valuable for educators, enabling them to set up real world applications and activities in sciences and mathematics.

<sup>2</sup> Notably, this data would be extremely valuable for educators, enabling them to set up real world applications and activities in sciences and mathematics.

### *Educational Applications*

- In a guided partnership with both RSMAS, NOAA, and The National Park Service, students would participate in applied curriculum in marine and life sciences, physics, chemistry, and mathematic

### Longer Term Potential

#### *Community Benefits*

- Since both schools represent some of the best and the brightest students in Miami, educating these youths about the local ecology and environment means enlightening our future civic leaders and prominent citizens. Perhaps of equal importance would be the fact that ecosystem surveys done by these schools are not grant dependent, and transitory as is much science, research at the university level. These schools could contribute long-term studies that would be of immense value to the body of scientific research.

#### *Outreach*

- Through Ransom Everglades, *Summerbridge Miami*<sup>3</sup> could be incorporated into the proposed Stiltsville educational enterprise. This is a worthy goal, welcoming another aspect of the community and fostering the seeds of stewardship and environmental responsibility. Of course, these students could also participate in environmental surveys that would be of significant research value.

#### *“Camping” Programs*

- At some time in the future, it would seem feasible to begin developing an environmental education program, run with the Parks Service, that reaches out to enlighten the city population about Bay ecology and environmental responsibility. Two-day overnight programs could be the start of outreach into the public schools and into the community in general.

---

<sup>3</sup> Part of Ransom Everglades' program of outreach involves housing (on campus) the Summerbridge Miami office. The Miami arm of this national program provides tutoring, summer courses, guidance, and mentoring for talented inner-city youth all year round but especially over the summer months when students are out of school.

## Potential Obstacles

### *Access*

- Clearly, educational programs cannot proceed without access to the Stilt houses. This means a boat capable of carrying a large group of people to the site. Fortunately, programs run through the Outreach Office of RSMAS can employ University of Miami dive personnel and local boat charters to access the area. In the case of Ransom Everglade the school has proposed to purchase an outboard skiff capable of carrying up to eighteen persons.

### *Environmental impact*

- Allowing class-sized groups of students access to the Stiltsville flats and marine environment holds the possibility of environmental damage. Students must be educated as to the proper way to conduct research and experimentation. The guidance of RSMAS and the National Parks Service will be crucial in minimizing the risk of negative impact.

## Conclusion

Stiltsville is an ideal place for conducting programs of research, education, and outreach. The unique fixed structures would provide boat dockage, research and data station bases, and classrooms. A partnership of RSMAS, Ransom Everglades, and MAST Academy will strive to educate our future leaders and conduct essential environmental research while being sensitive to the natural environment of the park. Therefore, we persons listed below submit this proposal to *The Stiltsville Committee on Alternative Uses*.

*Dr. Jay Calkins, Science Department Chair, Ransom Everglades School*

*Dr. Tim Dixon, Professor, University of Miami*

*Dr. Henny Groeschel, Scientist, RSMAS-MGG, University of Miami.*

*Barbara Lester, Director of Marine Programs, Science Department, Ransom Everglades School*

*David Skipp, [add title here, David]*

*Steve Wermus, English Teacher, Waterfront Director, Ransom Everglade School*

*Dr. Rod G. Zika, Professor and Chairman, RSMAS, University of Miami; Chief Scientist, International Seakeepers Society.*

Appendix

[Seakeepers brochure or info summary and sample lesson plans here]



TO: Members of the National Park Advisory Board s Stiltsville  
Committee

FROM: The *SEABay* (Steewardship, Education, and Awareness of Our  
Bay) *Partnership*

RE: Proposed Alternative Uses for Stiltsville Structures

DATE: September 24, Keys Gate Golf & Tennis Club, Homestead, Florida

The *SEABay Partnership* was founded to address the issue of alternative uses for the Stiltsville houses and has as its mission the stewardship of Biscayne Bay. This consortium formed by private and public school educators in partnership with University of Miami scientists, proposes that the Stiltsville area become a hub for marine research bay monitoring, and education.

Initially, we propose that:

1. Stiltsville become part of a worldwide data network as the site of an *International Seakeepres Society* data station.

The *Seakeepers* model data station collects minute-by-minute information on weather, water temperature, salinity, dissolved oxygen, and other parameters. After collection, these data are made available to educators and scientists through a worldwide internet connection. The *Seakeepers Society*, also known as the International Society for Ocean Monitoring and Research (ISOMAR) is headquartered at the University of Miami *Rosensteil School of Marine and Atmospheric Science* (RSMAS) and the program partners with the *National Oceanic and Atmospheric Administration* (NOAA). The data will pr vide a long- term, continuous profile of the health and characteristics of the Bay.

2. Stiltsville become a base for research and education. The fixed structures will provide a stable center from which to implement studies and educational programs involving local public and private schools and the community at large.

Under the guidance of personnel from RSMAS and the National Park Service, school and community groups will perform valuable, long-term studies of the Safety Valve area that surrounds Stiltsville. Carefully supervised educational programs will plant the seeds of environmental responsibility in our youth, the future leaders of this community. Developing a sense of stewardship in our school children is essential, especially as our bay ecology faces the increasing pressure of rapid population growth.

3. SeaBay Partnership be established as a permanent foundation. The Foundation will provide the proper vehicle for managing the SeaBay program and attracting support necessary to cover the costs associated with this ambitious plan.

## REFERENCES

The *SeaBay Partnership* is currently drafting a detailed, formal proposal on research and educational uses for the Stiltsville area. At this early stage, we ask the blessing of the Stiltsville Committee to develop our concept and seek an indication from the Committee of its willingness to consider such a proposal.

Respectfully yours,

***The SEABay Partnership***

*Dr. Jay Calkins*, Science Department Chair, Ransom Everglades School.

*Barbara Lester*, Director of Marine Programs, Science Department, Ransom Everglades School.

*Steve Wermus*, English Teacher and Waterfront Director, Ransom Everglades School.

*David Skipp*, Class of 71, trustee and chair of the Committee on Policy and Planning, Ransom Everglades School.

*Dr. Tim Dixon*, Professor, RSMAS-Marine Geology & Geophysics, University of Miami.

*Dr. Henny Groeschel*, Scientist, RSMAS-Marine Geology & Geophysics, University of Miami; Founding Scientist, Project INSTAR.

*Adele Tallman*, Research Associate, RSMAS-Marine Biology & Fisheries, University of Miami.

*Dr. Rod G. Zika*, Professor, RSMAS-Marine & Atmospheric Chemistry, University of Miami; Chief Scientist, International *Seakeepers* Society.

*Mark Tohulka*, Environmental Science Teacher, MAST Academy, Miami-Dade County Public Schools.

*Pam Schlachtman*, Science Coordinator, South Dade High School, Miami-Dade County Public Schools.

*Kirsten Schwarte*, Science Teacher, Center for Environmental Education — Crandon Park, Miami-Dade County Public Schools

*Mabel Miller*, Environmental Educator and Activist, Key Biscayne, Florida

## APPENDIX E

### SPECIES OBSERVED OR RECORDED IN THE STILTSVILLE REGION OF BISCAYNE NATIONAL PARK

Common Name	Scientific Name	Eggs	Larvae	Juveniles	Adults
Shrimp Fishery Management Unit					
Brown shrimp	<i>Penaeus aztecus</i>			X	X
Pink shrimp	<i>Penaeus duorarum</i>			X	X
White shrimp	<i>Penaeus setiferus</i>			X	X
Royal red shrimp	<i>Pleoticus rebustus</i>			X	X
Seabob shrimp	<i>Xiphopenaeus kroyeri</i>			X	X
Spiny Lobster Management Unit					
Spiny lobster	<i>Panulirus argus</i>	X	X	X	X
Red Drum Management Unit					
Red drum	<i>Sciaenops ocellatus</i>		X	X	X
Snapper Grouper Management Unit					
Balistidae - Triggerfishes					
Gray triggerfish	<i>Balistes capriscus</i>	X	X	X	X
Queen triggerfish	<i>Balistes vetula</i>	X	X	X	X
Carangidae - Jacks					
Yellow jack	<i>Caranx bartholomaei</i>			X	X
Blue runner	<i>Caranx crysos</i>			X	X
Crevalle jack	<i>Caranx hippos</i>			X	X
Bar jack	<i>Caranx ruber</i>			X	X
Greater amberjack	<i>Seriola dumerili</i>		X	X	X
Lesser amberjack	<i>Seriola fasciata</i>			X	X
Almaco jack	<i>Seriola rivoliana</i>			X	X
Banded rudderfish	<i>Seriola zonata</i>			X	X
Ephippidae--Spadefishes					
Atlantic spadefish	<i>Chaetodipterus faber</i>			X	X
Haemulidae - Grunts					
Black margate	<i>Anisotremus surinamensis</i>			X	X
Porkfish	<i>Anisotremus virginicus</i>			X	X
Margate	<i>Haemulon album</i>			X	X
Tomtate	<i>Haemulon aurolineatum</i>			X	X
Smallmouth grunt	<i>Haemulon chrysargyreum</i>			X	X
French grunt	<i>Haemulon flavolineatum</i>			X	X
Spanish grunt	<i>Haemulon macrostomum</i>			X	X
Cottonwick	<i>Haemulon melanurum</i>			X	X
Sailors choice	<i>Haemulon parrai</i>			X	X

## REFERENCES

Common Name	Scientific Name	Eggs	Larvae	Juveniles	Adults
White grunt	<i>Haemulon plumieri</i>			X	X
Blue stripe grunt	<i>Haemulon sciurus</i>			X	X
Lutjanidae--Snappers					
Queen snapper	<i>Etelis oculatus</i>			X	X
Mutton snapper	<i>Lutjanus analis</i>			X	X
Schoolmaster	<i>Lutjanus apodus</i>			X	X
Blackfin snapper	<i>Lutjanus buccanella</i>			X	X
Red snapper	<i>Lutjanus campechanus</i>			X	X
Cubera snapper	<i>Lutjanus cyanopterus</i>			X	X
Gray snapper	<i>Lutjanus griseus</i>			X	X
Mahogany snapper	<i>Lutjanus mahogoni</i>			X	X
Dog snapper	<i>Lutjanus jocu</i>			X	X
Lane snapper	<i>Lutjanus synagris</i>			X	X
Silk snapper	<i>Lutjanus vivanus</i>			X	X
Yellowtail snapper	<i>Ocyurus chrysurus</i>			X	X
Vermilion snapper	<i>Rhomboplites aurorubens</i>			X	X
Malacanthidae--Tilefishes					
Sand tilefish	<i>Malacanthus plumieri</i>			X	X
Serranidae--Sea Basses and Groupers					
Rock hind	<i>Epinephelus adscensionis</i>			X	X
Graysby	<i>Epinephelus cruentatus</i>			X	X
Speckled hind	<i>Epinephelus drummondhayi</i>			X	X
Yellowedge grouper	<i>Epinephelus flavolimbatus</i>			X	X
Coney	<i>Epinephelus fulvus</i>			X	X
Red hind	<i>Epinephelus guttatus</i>			X	X
Goliath grouper	<i>Epinephelus itajara</i>			X	X
Red grouper	<i>Epinephelus morio</i>			X	X
Nassau grouper	<i>Epinephelus striatus</i>			X	X
Black grouper	<i>Mycteroperca bonaci</i>			X	X
Yellowmouth grouper	<i>Mycteroperca interstitialis</i>			X	X
Gag	<i>Mycteroperca microlepis</i>			X	X
Scamp	<i>Mycteroperca phenax</i>			X	X
Yellowfin grouper	<i>Mycteroperca venenosa</i>			X	X
Sparidae—Porgies					
Sheepshead	<i>Archosargus probatocephalus</i>			X	X
Grass porgy	<i>Calamus arctifrons</i>			X	X
Jolthead porgy	<i>Calamus bajonado</i>			X	X
Saucereye porgy	<i>Calamus calamus</i>			X	X

Common Name	Scientific Name	Eggs	Larvae	Juveniles	Adults
Whitebone porgy	<i>Calamus leucosteus</i>			X	X
Knobbed porgy	<i>Calamus nodosus</i>			X	X
Labridae--Wrasses					
Hogfish	<i>Lachnolaimus maximus</i>		X		
Puddingwife	<i>Halichoeres radiatus</i>			X	
Coastal Migratory Pelagic Management Unit					
Cero	<i>Scomberomorus regalis</i>			X	X
Cobia	<i>Rachycentron canadum</i>			X	X
Dolphin	<i>Coryphaena hippurus</i>			X	X
King mackerel	<i>Scomberomorus cavalla</i>			X	X
Little tunny	<i>Euthynnus alletteratus</i>			X	X
Spanish mackerel	<i>Scomberomorus maculatus</i>			X	X
Coral, Coral Reefs, and Live/Hard Bottom Habitat*					
Coral belonging to the class Hydrozoa (fire corals and hydrocorals).		X	X	X	X
Coral belonging to the class Anthozoa, subclass Hexacorallia, orders Scleractinia (stony corals) and Antipatharia (black corals).		X	X	X	X
Seafan, <i>Gorgonia flabellum</i> or <i>G. ventalina</i>		X	X	X	X
Coral in a coral reef, except for allowable octocoral Coral in a habitat area of particular concern including allowable octocoral.		X	X	X	X
Live rock means living marine organisms, or an assemblage thereof, attached to a hard substrate, including dead coral or rock (excluding individual mollusk shells).		X	X	X	X

\*Corals (hard and soft corals) found primarily under existing structures and in footprints of former structures; see “Biological Resources” section for complete listing of corals observed at Stiltsville.

## **APPENDIX F**

### **LETTER FROM THE KEEPER OF THE NATIONAL REGISTER OF HISTORIC PLACES**

United States Department of the Interior  
NATIONAL PARK SERVICE  
1849 C Street NW  
Washington, D.C. 20240

In reply refer to: H32(2280)

Janet Snyder Matthews  
State Historic Preservation Officer  
Director, Division of Cultural Resources  
Department of State  
R. A. Gray Building, 500 S. Bronough Street  
Tallahassee, FL 32399-0250

Katherine H. Stevenson  
Associate Director, Cultural Resource Stewardship and Partnerships  
National Park Service  
1849 C Street, NW  
Washington, DC 20240

Dear Ms. Matthews and Ms. Stevenson:

We have carefully reviewed the nomination for Stiltsville submitted to us by your offices. As you know, this nomination is a modified version of the nomination submitted to the National Register in February 1999 and rejected in March 1999. The property was originally nominated as a district, with significance claimed under Criterion A, in the area of recreation and culture, and under Criterion C, for architecture, and Criteria Consideration G, for properties that were constructed within the last 50 years. The period of significance began in 1960 and ended in 1965. The principal change is that the present nomination claims significance for Stiltsville under National Register Criterion A in the areas of entertainment/recreation and community planning and development as a traditional cultural property, and does not include the earlier claim that the present buildings themselves are significant for their architecture. Other modifications reflect this new argument, including the expansion of the period of significance to 1937 to the present, and the assertion that the property does not have to meet the requirements of Criteria Consideration G. Because the other questions are dependent on the eligibility of Stiltsville as a traditional cultural property, this letter will concentrate on that critical issue.

The National Register bulletin Guidelines for Evaluating and Documenting Traditional Cultural Properties defines a traditional cultural property as "one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important to maintaining the continuing cultural identity of the community." The bulletin defines "culture" as the "traditions, beliefs, practices, lifeways, arts, crafts, and social institutions of any

community.” It defines “traditional” as referring to “those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice.” Stiltsville does not meet the definition of a traditional cultural property.

The documentation does not clearly define the community with which Stiltsville is associated. It does not identify the cultural practices or beliefs associated with Stiltsville, indicate how these practices and beliefs can be considered traditional, or explain why they are important in maintaining the community’s cultural identity. Although it suggests that the community generally includes the entire “Biscayne Bay area” (page 8/10) or the “people and communities around Biscayne Bay” (page 8/11), the nomination lacks the citations of ethnographic, ethnohistorical, folklore, or other studies that are usually required to identify the community, to define the traditional cultural beliefs, practices, etc., and to explain the ways in which they are critical to maintaining the cultural identity of that community.

The nomination does not provide convincing evidence of the long-term significance of Stiltsville. The documentation includes many letters and other appreciative comments from visitors to Stiltsville in the 1950s and 60s. It also contains evidence that the importance of this place was in dispute. During its “hot spot” days, some local residents wanted Stiltsville removed, regarding it as a “menace to property to the north of Cape Florida and the west on the mainland” (quoted on page 8/4). In the 1950s, residents of Key Biscayne saw Stiltsville as an eyesore inhabited by “squatters” who did not pay taxes (page 8/5). The 1965 decision of the Metro-Dade County Building and Zoning Department to prohibit any new construction on the flats also casts doubt that the importance of the area was commonly understood. According to the nomination, as late as 1976, Bruce Smathers, then Florida’s Secretary of State, called for the eradication of Stiltsville because it was a blight on Biscayne Bay (page 8/8).

The National Register Bulletin on evaluating traditional cultural places specifically states that “significance ascribed to a property only in the last 50 years cannot be considered traditional.” Because the nomination provides no evidence of the cultural importance of Stiltsville to a defined community prior to 1949 and includes evidence of conflicting views on its value since that time, we have concluded that the property does not meet the National Register Criteria for Evaluation as a traditional cultural property.

In our previous comments, we stated that Stiltsville also does not meet National Register standards of exceptional historical or architectural importance that are required for properties that have achieved significance within the last 50 years. According to the nomination, all but one of the houses was rebuilt after the 1965 hurricane; the remaining one was rebuilt after the 1960 hurricane. Only seven houses remain on the flats, the only ones to survive from a collection that once numbered almost 30. None of them has any association with Stiltsville’s early colorful history of semi-illicit commercial clubs. According to the nomination, the institution of the lease system ended the existence of commercial clubs in Stiltsville, as evidenced in a series of 1967 letters. Even the unusual construction techniques used to build the existing houses, designed to resist high winds and mandated by the new building codes introduced after the 1965 hurricane, serve to emphasize the differences between the Stiltsville of the 1990s and that of the 1930s, 40s, and 50s.

Finally, the present documentation nominates Stiltsville as a site. It states:

REFERENCES

*Having small vernacular buildings on the site is vital to the site's integrity. . . If all the houses now on the site blew away in a hurricane tomorrow, the site would retain its visual character if similar houses were built on it afterwards.*

We cannot agree that the historic integrity of Stiltsville has survived the destruction of its historic character-defining buildings. This would be equivalent to saying that if all the 19th century two-story commercial buildings in a historic downtown were torn down and replaced with new ones, the construction of new buildings would restore the historic character of the district as long as they were similar commercial buildings.

Stiltsville therefore does not meet any of the National Register Criteria for Evaluation and is not eligible for listing in the National Register of Historic Places. We are returning the nomination with this letter.

Sincerely,

(signed October 22, 1999)

Carol D. Shull  
Keeper of the National Register of Historic Places  
National Register, History, and Education

Enclosures



## APPENDIX G CONSULTATION LETTERS



### United States Department of the Interior

NATIONAL PARK SERVICE  
Biscayne National Park  
9700 S. W. 328<sup>th</sup> Street  
Homestead, Florida 33033-5634

IN REPLY REFER TO:

L3215

OCT 11 2002

Mr. Jay Slack  
Field Supervisor  
US Fish and Wildlife Service  
South Florida Ecological Services Office  
1339 20<sup>th</sup> Street  
Vero Beach, FL 32960

Subject: Biscayne National Park, General Management Plan Amendment and  
Environmental Impact Statement  
Section 106 Compliance, Stiltsville

Dear Mr. Slack:

Biscayne National Park is preparing an amendment to the park's general management plan and an environmental impact statement (EIS) to evaluate potential impacts to the natural and human environment resulting from a proposed action that would modify management and use of seven stilt structures (Stiltsville) in the northern portion of Safety Valve shoals within the boundary of Biscayne National Park, Miami-Dade County (see attached location map).

Under the proposed action, one or more organizations or individuals would be allowed to create a non-profit trust under the regulations of the Internal Revenue Service and non-competitively enter into a cooperative agreement with the National Park Service for the management and use of the Stiltsville structures. The trust would develop, manage, and maintain the seven existing Stiltsville structures to provide broad public access and diversity of use consistent with National Park Service policy and best management practices for environmental protection. The proposed action would include a mix of uses that might include:

- Public functions and services including non-profit organization functions, public and private education programs, scientific research activities, an artist-in-residence program, professional meetings and retreats, and rustic campsites.
- National Park Service functions, including interpretation, resource management, and ranger activities.

G.1 U.S. Fish and Wildlife Service

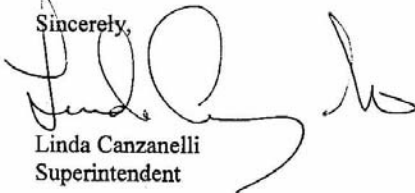
REFERENCES

In order to meet our Endangered Species Act (ESA) Section 7 consultation requirements for the EIS, we respectfully request that you provide us with the current listing and locations of endangered, threatened, proposed and candidate species and their associated critical habitats specific to Biscayne Bay, Florida and the region potentially affected by the proposed action.

This letter is the first step of consultation for this project to ensure that the planning effort adequately addresses ESA Section 7 requirements related to the Biscayne National Park's general management plan amendment and EIS. When the draft EIS is completed, a copy will be sent to you with an official transmittal letter for your review and comment.

If you have any questions or need any additional information, please contact me at (305) 230-1144, extension 3002, or John Hoesterey of Parsons at (303) 764-8821. We look forward to working cooperatively with you on the planning and implementation of this project.

Sincerely,



Linda Canzanelli  
Superintendent

Enclosure

cc: David Libman  
National Park Service  
Southeast Regional Office

bcc: John Hoesterey, Parsons

G.1 U.S. Fish and Wildlife Service (cont.)



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
South Florida Ecological Services Office  
1339 20<sup>th</sup> Street  
Vero Beach, Florida 32960



December 6, 2002

Linda Canzanelli  
Biscayne National Park  
National Park Service  
9700 South West 328<sup>th</sup> Street  
Homestead, Florida 33033-5634

Service Log No.: 4-1-03-TA-034  
Application No.: L3215  
Dated: October 11, 2002  
Applicant: Biscayne National Park  
County: Miami-Dade

Dear Ms. Canzanelli:

The Fish and Wildlife Service (Service) has received your request for the current listing and locations of endangered, threatened, proposed, and candidate species and their associated critical habitats specific to Biscayne Bay, Florida and the region potentially affected by the proposed action described below. This letter represents the Service's response to your species list request in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), and the provisions of the Fish and Wildlife Coordination Act of 1958, as amended (48 Stat. 401; 16 U.S.C. 661 *et seq.*).

### PROJECT DESCRIPTION

The proposed project is the creation of a non-profit trust that will develop, manage, and maintain the seven existing Stiltsville structures. The structures will be used to provide public access and diversity of use consistent with National Park Service policy. These uses might include public functions and services for non-profit organizations; public and private education programs; scientific research activities; an artist-in-residence program; professional meetings and retreats; rustic campsites; and National Park Service functions including interpretation, resource management, and ranger activities. The proposed project is located in Biscayne National Park, at 25°34.739' North latitude and 80°07.791' West longitude, in Miami-Dade County, Florida.

### G.1 U.S. Fish and Wildlife Service (cont.)

Linda Canzanelli  
December 6, 2002  
Page 2

#### THREATENED AND ENDANGERED SPECIES

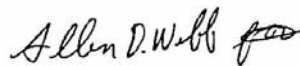
The following tables are enclosed which identify the current listing and locations of endangered, threatened, proposed, and candidate species and their associated critical habitats specific to Biscayne Bay, Florida and the region potentially affected by the proposed action. These tables represent (1) Listed Species in Miami-Dade County; and (2) Federally Listed and Candidate Species, and Designated Critical Habitats Occurrences in South Florida by County. These tables are also available at the South Florida Ecological Service's website at [http://verobeach.fws.gov/Species\\_list/countyfr.html](http://verobeach.fws.gov/Species_list/countyfr.html). Also enclosed are two Service GIS maps that identify listed species and critical habitats known to occur near the proposed project area.

#### FISH AND WILDLIFE RESOURCES

Based on the information provided in your letter, Aquatic Resources of National Importance (ARNI) occur within your project area. The Service would like the opportunity to review plans for activities that may impact ARNIs. If impacts may occur as a result of your project, Service biologists are available to offer assistance in reducing impacts to fish and wildlife resources within your project area.

Thank you for your cooperation and effort in protecting threatened and endangered species. If you have any questions please contact Chuck Kelso, Fish and Wildlife Biologist, at (772) 562-3909, extension 241.

Sincerely yours,



Linda S. Ferrell  
Assistant Field Supervisor  
South Florida Ecological Services Office

Enclosure

cc:  
EPA, West Palm Beach, Florida w/o enclosure  
FWC, Vero Beach, Florida w/o enclosure  
FDEP, Tallahassee, Florida w/o enclosure

G.1 U.S. Fish and Wildlife Service (cont.)

Listed Species in Miami-Dade County (updated June 2000)		
Species	Federal status	Habitat
Florida panther <i>Puma (=Felis) concolor coryi</i>	E	High pine, Tropical hardwood hammock, Scrub, Maritime hammock, Mesic temperate hammock, Pine rockland, Scrubby flatwoods, Mesic pine flatwoods, Hydric pine flatwoods, Dry prairie, Wet prairie, Freshwater marsh, Seepage swamp, Pond swamp, Mangrove
Puma (=Mountain lion) <i>Puma (=Felis) concolor</i>	T (S/A)	High pine, Tropical hardwood hammock, Scrub, Maritime hammock, Mesic temperate hammock, Pine rockland, Scrubby flatwoods, Mesic pine flatwoods, Hydric pine flatwoods, Dry prairie, Wet prairie, Freshwater marsh, Seepage swamp, Flowing water swamp, Pond swamp, Mangrove
West Indian manatee <i>Trichechus manatus</i>	E (CH)	Mangrove, Seagrass, Nearshore reef
Bald eagle <i>Haliaeetus leucocephalus</i>	T	High pine, Scrubby high pine, Maritime hammock, Mesic temperate hammock, Pine rockland, Scrubby flatwoods, Mesic pine flatwoods, Hydric pine flatwoods, Dry prairie, Wet prairie, Freshwater marsh, Seepage swamp, Flowing water swamp, Pond swamp, Mangrove, Saltmarsh, Seagrass
Cape Sable seaside sparrow <i>Ammodramus (=Ammodramus) maritimus mirabilis</i>	E (CH)	Wet prairie, Freshwater marsh
Everglade snail kite <i>Rostrhamus sociabilis plumbeus</i>	E (CH)	Hydric pine flatwoods, Freshwater marsh, Pond swamp
Roseate tern <i>Sterna dougallii dougallii</i>	T	Beach dune/Coastal strand, Saltmarsh, Seagrass, Nearshore reef
Wood stork <i>Mycteria americana</i>	E	Hydric pine flatwoods, Wet prairie, Freshwater marsh, Seepage swamp, Flowing water swamp, Pond swamp, Mangrove, Saltmarsh, Seagrass
American alligator <i>Alligator mississippiensis</i>	T (S/A)	Hydric pine flatwoods, Wet Prairie, Freshwater marsh, Seepage swamp, Pond Swamp, Mangrove, Hydric pine flatwoods, Wet prairie, Seepage swamp, Flowing water swamp, Pond swamp
American crocodile <i>Crocodylus acutus</i>	E (CH)	Mangrove, Seagrass
Eastern indigo snake <i>Drymarchon corais couperi</i>	T	High pine, Tropical hardwood hammock, Scrubby high pine, Beach dune/Coastal strand, Maritime hammock, Mesic temperate hammock, Pine rockland, Scrubby flatwoods, Mesic pine flatwoods, Hydric pine flatwoods, Dry prairie, Cutthroat grass, Freshwater marsh, Seepage swamp, Flowing water swamp, Pond swamp, Mangrove
Green sea turtle <i>Chelonia mydas (incl. Agassizi)</i>	E	Beach dune/Coastal strand, Seagrass, Nearshore reef
Hawksbill (=carey) sea turtle <i>Eretmochelys imbricata</i>	E	Beach dune/Coastal strand, Seagrass, Nearshore reef
Leatherback sea turtle <i>Dermochelys coriacea</i>	E	Beach dune/Coastal strand, Seagrass, Nearshore reef

file://C:\Documents%20and%20Settings\kelsoc\Desktop\Species%20Lists%20by%20County\Species%20... 10/30/2002

#### G.1 U.S. Fish and Wildlife Service (cont.)

REFERENCES

Loggerhead sea turtle <i>Caretta caretta</i>	T	Beach dune/Coastal strand, Seagrass, Nearshore reef
Schaus swallowtail butterfly <i>Heracles (= Papilio)</i> <i>aristodemus ponceanus</i>	E	Tropical hardwood hammock
Beach jacquemontia <i>Jacquemontia reclinata</i>	E	Beach dune/Coastal strand
Blodgett's silverbush <i>Arygythamnia blodgettii</i>	C	Tropical hardwood hammock, Pine rockland
Crenulate lead-plant <i>Amorpha crenulata</i>	E	Pine rockland
Deltoid spurge <i>Chamaesyce (= Euphorbia)</i> <i>deltoidea ssp. Deltoidea</i>	E	Beach dune/Coastal strand, Pine rockland
Florida brickell-bush <i>Brickellia mosieri</i>	C	Pine rockland
Florida pineland crabgrass <i>Digitaria pauciflora</i>	C	Pine rockland, Freshwater marsh, Seepage swamp
Garber's spurge <i>Chamaesyce (= Euphorbia)</i> <i>garberi</i>	T	Pine rockland
Johnson's seagrass <i>Halophila johnsonii</i>	T	Seagrass
Pineland sandmat <i>Chamaesyce ssp. Pinetorum</i>	C	Pine rockland
Scrub lupine <i>Lupinus aridorum</i>	E	Scrub
Small's milkpea <i>Galactia smallii</i>	E	Pine rockland
Tiny polygala <i>Polygala smallii</i>	E	High pine, Scrub, Pine rockland, Scrubby flatwoods

file://C:\Documents%20and%20Settings\kelsoc\Desktop\Species%20Lists%20by%20County\Species%20l... 10/30/2002

G.1 U.S. Fish and Wildlife Service (cont.)

### G.1 U.S. Fish and Wildlife Service (cont.)

□ = Species occurs in county; E=Endangered; T=Threatened; C=Candidate; CH=Critical habitat designated; XN=Nonessential experimental population; SA=Similarity of Appearance

revised 12/07/99

[illegible]

[ ] = Species occurs in county; E=Endangered; T=Threatened; C=Candidate; Clf=Critical habitat designated; XN=Nonessential experimental population; SA=Similarity of appearance

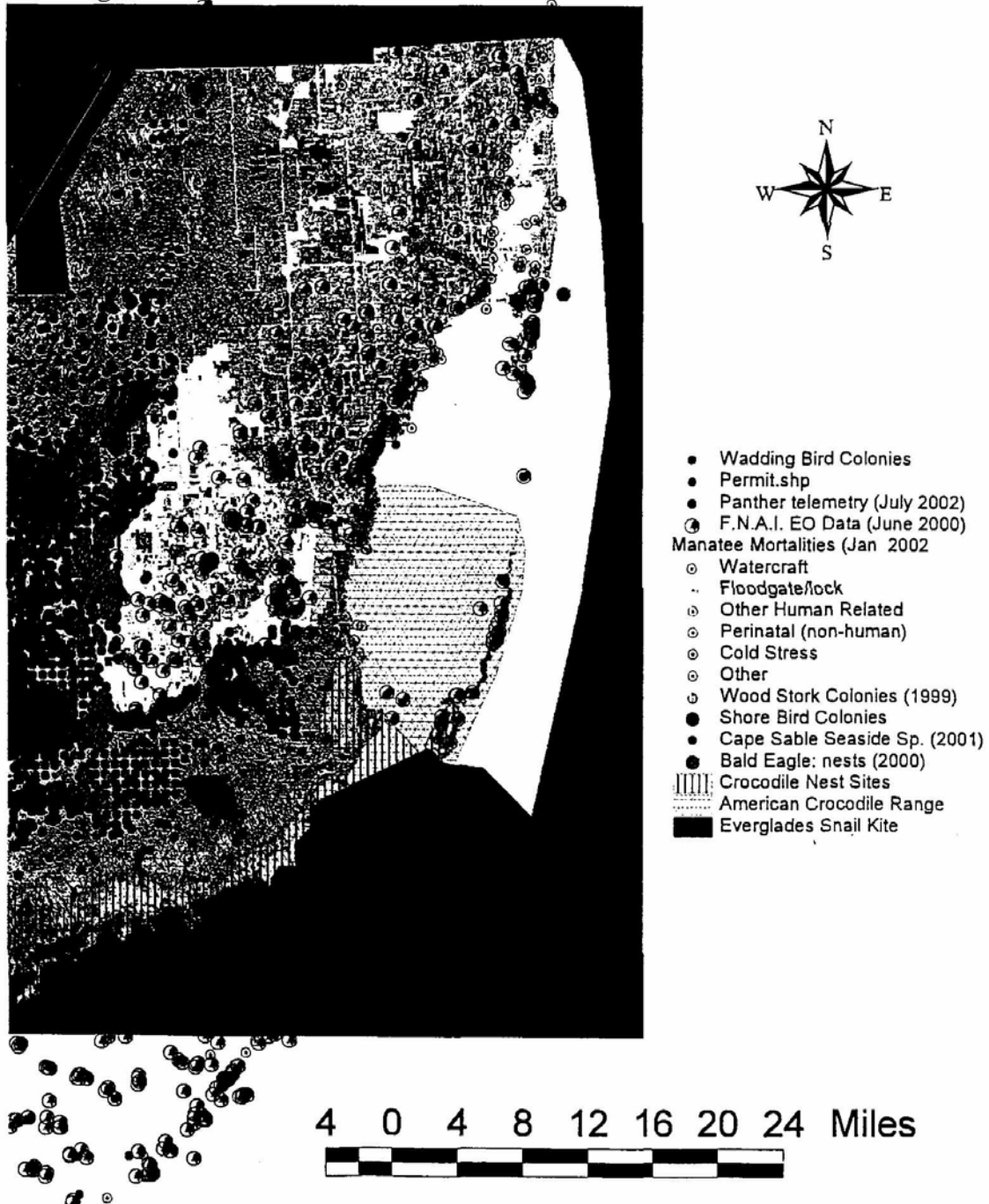


□ = Species occurs in county; E=Endangered, T=Threatened; C=Candidate; CH=Critical habitat designated; XN=Nonessential experimental population; SA=Similarity of Appearance

### G.1 U.S. Fish and Wildlife Service (cont.)

South Florida Field Office

# GIS Site Check for Biscayne Bay National Park Service Log # 4-1-03-I-34 (October 30, 2002)



G.1 U.S. Fish and Wildlife Service (cont.)





## United States Department of the Interior

NATIONAL PARK SERVICE  
Biscayne National Park  
9700 S. W. 328<sup>th</sup> Street  
Homestead, Florida 33033-5634

IN REPLY REFER TO:

L3215

OCT 11 2002

Ms. Georgia Cranmore  
Assistant Regional Administrator  
National Marine Fisheries Service  
Southeast Regional Office, Protected Resources Division  
9721 Executive Center Drive North  
St. Petersburg, FL 33702-2432

Subject: Biscayne National Park, General Management Plan Amendment  
And Environmental Impact Statement  
Section 106 Compliance, Stiltsville

Dear Ms. Cranmore:

Biscayne National Park is preparing an amendment to the park's general management plan and an environmental impact statement (EIS) to evaluate potential impacts to the natural and human environment resulting from a proposed action that would modify management and use of seven stilt structures (Stiltsville) in the northern portion of Safety Valve shoals within the boundary of Biscayne National Park, Miami-Dade County (see attached location map).

Under the proposed action, one or more organizations or individuals would be allowed to create a non-profit trust under the regulations of the Internal Revenue Service and non-competitively enter into a cooperative agreement with the National Park Service for the management and use of the Stiltsville structures. The trust would develop, manage, and maintain the seven existing Stiltsville structures to provide broad public access and diversity of use consistent with National Park Service policy and best management practices for environmental protection. The proposed action would include a mix of uses that might include:

- Public functions and services including non-profit organization functions, public and private education programs, scientific research activities, an artist-in-residence program, professional meetings and retreats, and rustic campsites.
- National Park Service functions, including interpretation, resource management, and ranger activities.

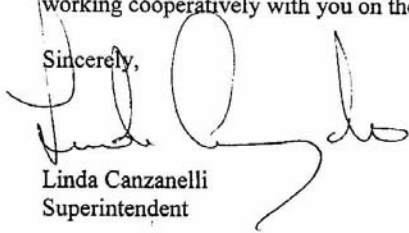
### G.2 National Marine Fisheries Service

REFERENCES

In order to meet our Endangered Species Act (ESA) Section 7 consultation requirements for the EIS, we respectfully request that you provide us with the current listing and locations of endangered, threatened, proposed and candidate species and their associated critical habitats specific to Biscayne Bay, Florida and the region potentially affected by the proposed action. This letter is the first step of consultation for this project to ensure that the planning effort adequately addresses ESA Section 7 requirements related to the Biscayne National Park's general management plan amendment and EIS. When the draft EIS is completed, a copy will be sent to you with an official transmittal letter for your review and comment.

If you have any questions or need any additional information, please contact me at (305) 230-1144 extension 3002, or John Hoesterey of Parsons at (303) 764-8821. We look forward to working cooperatively with you on the planning and implementation of this project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Linda Canzanelli', is written over the word 'Sincerely,'.

Linda Canzanelli  
Superintendent

Enclosure

cc: David Libman  
National Park Service  
Southeast Regional Office

bcc: John Hoesterey, Parsons

**G.2 National Marine Fisheries Service (cont.)**



## United States Department of the Interior

NATIONAL PARK SERVICE  
Biscayne National Park  
9700 S. W. 328<sup>th</sup> Street  
Homestead, Florida 33033-5634

IN REPLY REFER TO:

L3215

**OCT 11 2002**

Dr. Janet Snyder Matthews,  
State Historical Preservation Officer  
R. A. Gray Building, Room 305  
500 S. Bronough St.  
Tallahassee, FL 32399-0250

Subject: Biscayne National Park, General Management Plan Amendment and  
Environmental Impact Statement  
Section 106 Compliance, Stiltsville

Dear Dr. Matthews:

Biscayne National Park is developing an amendment to the General Management Plan/Environmental Impact Statement. This document will evaluate specific actions for the management of the Stiltsville area within the park and will address the effects on potentially eligible cultural resources that may be present within the area of potential impact (see attached location map).

We would like to invite your office to participate in the development of this planning effort in accordance with 36 CFR 800, and with the 1995 Service-wide Programmatic Agreement among your office, the Advisory Council on Historic Preservation, and the National Park Service.

This letter also is to notify your office that we plan to use the environmental impact statement for the general management plan amendment to accomplish compliance for both Section 106 and the National Environmental Policy Act (as described in 36 CFR 800.8 (a-c)).

Under the proposed action, one or more organizations or individuals would be allowed to create a non-profit trust under the regulations of the Internal Revenue Service and non-competitively enter into a cooperative agreement with the National Park Service for the management and use of the Stiltsville structures. The trust would develop, manage, and maintain the seven existing Stiltsville structures to provide broad public access and diversity of use consistent with National

**G.3 State Historical Preservation Officer**

## REFERENCES

Park Service policy and best management practices for environmental protection. The proposed action would include a mix of uses that might include:

- Public functions and services including non-profit organization functions, public and private education programs, scientific research activities, an artist-in-residence program, professional meetings and retreats, and rustic campsites.
- National Park Service functions, including interpretation, resource management, and ranger activities.

Upon completion, the draft general management plan amendment/environmental impact statement will be forwarded to you for your review and comment. We look forward to your participation in the planning process. We believe that it will result in better planning for cultural resources management, and will help ensure that cultural resources are adequately considered during the preparation of the plan and accompanying environmental document.

Should you have any questions or desire additional information, please contact Rick Clark at Biscayne National Park, phone (305)-230-1144, extension 3007, or John Hoesterey of Parsons at (303) 764-8821.

Sincerely,



Linda Canzanelli  
Superintendent

Enclosure

cc: David Libman  
National Park Service  
Southeast Regional Office

bcc: John Hoesterey, Parsons

**G.3 State Historical Preservation Officer (cont.)**





FLORIDA DEPARTMENT OF STATE  
Kenneth W. Detzner  
Secretary of State  
DIVISION OF HISTORICAL RESOURCES

Ms. Cindy Cranick  
Florida State Clearinghouse Coordinator  
Florida Department of Environmental Protection  
3900 Commonwealth Boulevard, Mail Station 47  
Tallahassee, Florida 32399-3000

February 4, 2003

RE: DHR No. 2003-62 / Received by DHR: January 2, 2003  
SAI #: 200212263249C  
*National Park Service – General Management Plan Amendment – Stiltsville Management*  
Biscayne National Park, Miami-Dade County, Florida

Dear Ms. Cranick:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and 36 *C.F.R., Part 800: Protection of Historic Properties*. The State Historic Preservation Officer is to advise Federal agencies when identifying historic properties (listed or eligible for listing, in the *National Register of Historic Places*), assessing effects upon them, and considering alternatives to avoid or minimize adverse effects.

We have reviewed the four alternatives released by the Biscayne National Park in the referenced environmental assessment. Based on the information provided, it is the opinion of this office that Alternative A, non-profit development and management, is the preferred alternative, and, therefore, the proposed undertaking will have no adverse effect on historic properties listed or eligible for listing in the *National Register* or otherwise of historical, architectural or archaeological value.

If there are any questions concerning our comments or recommendations, please contact Sarah Jalving, Historic Sites Specialist, by electronic mail at [sjalving@mail.dos.state.fl.us](mailto:sjalving@mail.dos.state.fl.us) or at 850-245-6333 or SunCom 205-6333. Thank you for your interest in protecting Florida's historic properties.

Sincerely,

Janet Snyder Matthews, Ph.D., Director, and  
State Historic Preservation Officer

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office  
(850) 245-6300 • FAX: 245-6435

☐ Archaeological Research  
(850) 245-6444 • FAX: 245-6436

☐ Historic Preservation  
(850) 245-6333 • FAX: 245-6437

☐ Historical Museums  
(850) 245-6400 • FAX: 245-6433

☐ Palm Beach Regional Office  
(561) 279-1475 • FAX: 279-1476

☐ St. Augustine Regional Office  
(904) 825-5045 • FAX: 825-5044

☐ Tampa Regional Office  
(813) 272-3843 • FAX: 272-2340

G.3 State Historical Preservation Officer (cont.)



## United States Department of the Interior

NATIONAL PARK SERVICE  
Biscayne National Park  
9700 S. W. 328<sup>th</sup> Street  
Homestead, Florida 33033-5634

IN REPLY REFER TO:

L3215

OCT 11 2002

Mr. Don Klima  
Advisory Council on Historic Preservation  
Old Post Office Building  
1100 Pennsylvania Avenue, NW, Suite 809  
Washington, DC 20004

Subject: Biscayne National Park, General Management Plan Amendment and  
Environmental Impact Statement  
Section 106 Compliance, Stiltsville

Dear Mr. Klima:

Biscayne National Park is developing an amendment to the General Management Plan/Environmental Impact Statement. This document will evaluate specific actions for the management of the Stiltsville area within the park and will address the effects on potentially eligible cultural resources that may be present within the area of potential impact (see attached location map).

We would like to invite your office to participate in the development of this planning effort in accordance with 36 CFR 800, and with the 1995 Service-wide Programmatic Agreement among your office, the Advisory Council on Historic Preservation, and the National Park Service.

This letter also is to notify your office that we plan to use the environmental impact statement for the general management plan amendment to accomplish compliance for both Section 106 and the National Environmental Policy Act (as described in 36 CFR 800.8 (a-c)).

Under the proposed action, one or more organizations or individuals would be allowed to create a non-profit trust under the regulations of the Internal Revenue Service and non-competitively enter into a cooperative agreement with the National Park Service for the management and use of the Stiltsville structures. The trust would develop, manage, and maintain the seven existing Stiltsville structures to provide broad public access and diversity of use consistent with National

**G.4 Advisory Council on Historic Preservation**

Park Service policy and best management practices for environmental protection. The proposed action would include a mix of uses that might include:

- Public functions and services including non-profit organization functions, public and private education programs, scientific research activities, an artist-in-residence program, professional meetings and retreats, and rustic campsites.
- National Park Service functions, including interpretation, resource management, and ranger activities.

Upon completion, the draft general management plan amendment/environmental impact statement will be forwarded to you for your review and comment. We look forward to your participation in the planning process. We believe that it will result in better planning for cultural resources management, and will help ensure that cultural resources are adequately considered during the preparation of the plan and accompanying environmental document.

Should you have any questions or desire additional information, please contact Rick Clark at Biscayne National Park, phone (305)-230-1144, extension 3007, or John Hoesterey at Parsons (303) 764-8821.

Sincerely,



Linda Canzanelli  
Superintendent

Enclosure

cc: David Libman  
National Park Service  
Southeast Regional Office

bcc: John Hoesterey, Parsons

#### G.4 Advisory Council on Historic Preservation (cont.)





As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

**UNITED STATES  
DEPARTMENT OF THE  
INTERIOR  
NATIONAL PARK SERVICE**

**Biscayne National Park**  
9700 S.W. 328th Street  
Homestead, FL 33033-5634

**FIRST-CLASS MAIL  
POSTAGE & FEES PAID  
NATIONAL PARK SERVICE  
PERMIT NO. G-83**